

**ES-2 - FULL SCALE VEHICLE TESTS
NCAP LEFT SIDE IMPACT**

**General Motors Company
2001 Buick LeSabre 4 door**

**PREPARED BY:
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BURLINGTON, WI 53105**



October 26, 2001

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
VOLPE NATIONAL TRANSPORTATION SYSTEM CENTER
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CAMBRIDGE, MA 02142**

This final test report was prepared for the U.S. Department of Transportation, Volpe National Transportation System Center, under Contract No. DTRS57-98-D-00041.

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SECTION 1
PURPOSE AND TEST PROCEDURE

This Side Impact test was conducted as part of Contract No. DTRS57-98-D-00041, task order 6, sponsored by the U.S. Department of Transportation, Volpe National Transportation System Center. The purpose of this test was to evaluate the response of the ES-2 dummies in a 2001 Buick LeSabre 4 door when subjected to an NCAP left side impact.

MGA does not endorse or certify products. The manufacturer's name appears solely for identification purposes.

SECTION 2

SUMMARY OF SIDE IMPACT TEST

A 2001 Buick LeSabre 4 door was impacted on the left side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 62.0 kph (38.5 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by MGA Research Corporation in Burlington, Wisconsin, on October 26, 2001. Pre- and post-test photographs of the test vehicle, the MDB and the side impact dummies (ES-2 front and CRABI left and right mid seat) are included in Appendix A.

Two ES-2 side impact dummies were placed in the left front and left rear designated seating positions according to instructions specified in the FMVSS 214 Side Impact Laboratory Test Procedure which is dated August 2, 1999 and Evaluation of Eurosid-1 Positioning Procedure Appendix A dated February 5, 1997. The side impact event was documented by ten high speed cameras. Camera locations and other pertinent camera information can be found in this report.

Appendix B contains the vehicle and dummy response data traces. A summary of the side impact dummy (ES-2) configuration and performance verification test data is shown in Appendix C. Dummy and vehicle calibration data can be found in Appendix D of this report.

Appendix E contains a copy of the dummy positioning procedure used, Appendix F contains the ES-2 peak responses, and Appendix G contains the ES-2 sign conventions.

The following table summarizes the results of the Left Side Impact test:

		Left Front	Left Rear
1) Head Performance Criteria			
< 1000	T1 (msec)	37	40
	T2 (msec)	75	165
	HPC	712	220
2) Thorax Performance Criteria			
2.1) Chest Deflection < 42 mm	Upper Rib Deflection	55.8	13.0
	Mid Rib Deflection	50.8	4.0
	Lower Rib Deflection	44.4	18.7
2.2) Viscous Criteria < 1.0 (m/sec)	Upper Rib	1.6	0.12
	Mid Rib	1.4	0.0
	Lower Rib	1.1	0.23
3) Abdominal Protection Criterion			
Sum < 2500 N	Front Abdominal Force	437	1383
	Mid Abdominal Force	475	1170
	Rear Abdominal Force	574	571
	Sum of Abdominal Force	1324	3110
4) Pelvis Performance Criterion			
< 6000 N	Pubic Symphysis Force	2420	4038

HIC		Left Front	Left Rear
	T1 (msec)	46.0	46.4
	T2 (msec)	49.3	62.9
	T2 - T1 (msec)	3.3	16.5
	HIC	712	220

Fir Filtered	Left Front	Left Rear
Upper Rib Y (g's)	169.7	87.9
Mid Rib Y (g's)	152.7	55.8
Lower Rib Y (g's)	105.4	120.6
Lower Spine Y (g's)	70.1	68.3
Pelvis Y (g's)	58.9	63.7
TTI (g's)	120	94

Contacts	Left Front	Left Rear
Head (msec)	no contact recorded	40
Arm (msec)	12	24
Rib (msec)	16	34
Pelvis (msec)	21	14

TEST NOTES

A complete data set, including all ES-2 instrumentation, can be found by accessing the electronic data from the U.S. Department of Transportation.

The following load cell channels were found to be bad during pre test calibration and inspection:

Driver T12 - MX

The passenger T12 load cell was not available for use during test.

There was no contact recorded electronically for the driver head. The driver head impacted an area not being monitored.

The following channels were not used to avoid interference with the restraint systems:

Left Upper B Post Y

Left Driver Seat Frame Y

Right Driver Seat Frame Y

The following channels had no valid data collected:

Left Mid B Post Y

SECTION 3
SIDE IMPACT DUMMY (ES-2) AND VEHICLE TEST DATA

DATA SHEET NO. 1**GENERAL TEST AND VEHICLE PARAMETER DATA**Test Vehicle: 2001 Buick LeSabre 4 doorTest Date: October 26, 2001**TEST VEHICLE INFORMATION**

Make	Buick
Model	LeSabre
Body Style	4 door
VIN	1G4HP54K514277692
Color	Painted Orange
Odometer Reading	23
Transmission	4 Sp. Automatic
Final Drive	Front
Number of Cylinders	6
Engine Displacement	3.8
Engine Placement	lateral

TEST VEHICLE OPTIONS

Front Airbags	yes
Side Airbags	yes
Power Windows	yes
Power Steering	yes
Power Door Locks	yes
Tilt Wheel	yes
Air Conditioning	yes
Power Brakes	yes
Anti-lock Brakes	yes
AM/FM	yes
Cruise Control	yes

DATA FROM CERTIFICATION LABEL

Manufactured By	General Motors
Date of Manufacture	5-01

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	231	231
Cold Pressure (kPa)	231	231
Recommend Tire Size	P215/70R15	P215/70R15
Tire Size on Vehicle	P215/70R15	P215/70R15
Tire Manufacturer	General	General

Measured Parameter	Front	Rear	Third	Total
Type of Seats	bucket	bench		
Number of Occupants	2	3		5
Capacity Wt. (VCW) (kg)				488.1
Cargo Weight (RCLW) (kg)				79.8

DATA SHEET NO. 1...(continued)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	504.4	311.2		559.3	414.6	
Right	kg	502.1	307.1		502.1	385.6	
Ratio	%	61.9	38.1		57.0	43.0	
Totals	kg	1006.5	618.3	1624.8	1061.4	800.2	1861.6

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1624.8
Weight of 2 P572F Side Impact Dummies	kg	161.5
Rated Cargo/Luggage Weight (RCLW)	kg	79.8
Calculated Vehicle Target Weight (TVTW)	kg	1866.1

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	729	729	738	742	1086
As Tested	mm	718	720	711	714	1226
Fully Loaded	mm	711	723	693	710	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2854
Total Vehicle Length at Left Side	mm	4198
Total Vehicle Length at Centerline	mm	5065
Total Vehicle Length at Right Side	mm	4194
Weight of Ballast in Cargo Area	kg	0

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2854
Target Impact Point Aft of Front Axle	mm	487
Actual Impact Point Aft of Front Axle	mm	482

DATA SHEET NO. 1...(continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001

NORMAL DESIGN RIDING POSITION

Driver seat back angle: 26E

Passenger seat back angle: non adjustable

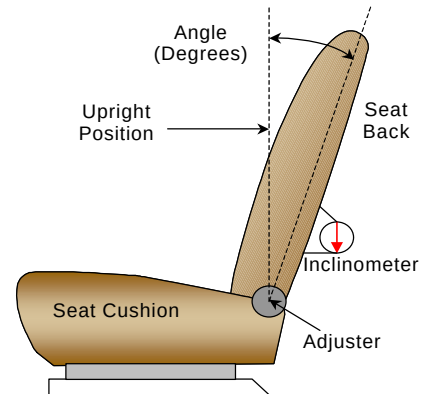
SEAT FORE/AFT POSITIONS

Driver seat fore/aft total travel: 220 mm travel

Rear passenger seat fore/aft total travel: non adjustable

Driver seat fore/aft position: 110 mm rearward

Rear passenger seat fore/aft position: non adjustable



FRONT SEAT ASSEMBLY

SEAT BELT UPPER ANCHORAGE

The shoulder belts are integrated into the seat back no d-ring or belt adjustment possible.

STEERING COLUMN ADJUSTMENT

The steering column was placed in the mid position.

DATA SHEET NO. 2
TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	504.4	311.2		559.3	414.6	
Right	kg	502.1	307.1		502.1	385.6	
Weight Ratio	%	61.9	38.1		57.0	43.0	
Totals	kg	1006.5	618.3	1624.8	1061.4	800.2	1861.6

MAXIMUM EXTERIOR STATIC CRUSH

Level	Measured Parameter	Units	Maximum Crush	Above Ground
Level 1	Sill Top Height	mm	160	254
Level 2	Occupant H-Point	mm	381	475
Level 3	Mid Door	mm	353	582
Level 4	Window Sill	mm	361	905
Level 5	Window Top	mm	107	1343
Level 2	Maximum Penetration	mm	381	475

INSTRUMENTATION

Left Front ES-2 Channels	70
Left Rear ES-2 Channels	66
Vehicle Structure Channels	27
MDB Channels	7
Total	170

DATA SHEET NO. 3**MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS**Impactor: FMVSS 214 Side Impact BarrierTest Date: October 26, 2001**MDB SPECIFICATIONS (mm)**

Measurement Description	Length
Overall Width of Framework Carriage	1252
Overall Length Including Honeycomb Face	4115
Wheel base of Framework Carriage	2590
C.G. Location aft of Front Axle	1105

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	395.1	293.8	
Right	kg	385.7	287.4	
Ratio	%	57.3	42.7	
Totals	kg	780.8	581.2	1362.0

SPEED AND IMPACT ANGLE DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 - 62.8	62.0
Trap No. 2 Velocity (Redundant)	km/h	61.1 - 62.8	NVD
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.7

NVD = No Valid Data Collected

MAXIMUM STATIC CRUSH OF HONEYCOMB FACE (mm)

Vertical Location			From Centerline		Max. Crush
Row	Description	Height	Distance	Direction	
A	Center of Bumper	432	800	Left	161
B	Top of Bumper	533	800	Left	99
C	Mid Level	686	800	Left	107
D	Top of Stack	813	800	Left	153

MDB INSTRUMENTATION AND CAMERAS

Accelerometers	5
Contact Switches	2
High Speed Cameras	2

DATA SHEET NO. 4**POST TEST OBSERVATIONS**Test Vehicle: 2001 Buick LeSabre 4 doorTest Date: October 26, 2001**TEST DUMMY INFORMATION AND CONTACT POINTS**

Description	Left Front	Left Rear
Dummy Type / Serial No.	ES-2/009	ES-2/010
Head Contact	B-post, headrest	Side header, C-post
Upper Torso Contact	airbag	door trim panel
Lower Torso Contact	door trim panel	arm-rest
Left Knee Contact	door trim panel	door trim panel
Right Knee Contact	left knee	left knee

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Left Front	Left Rear
Left Side Door Opening	remained closed	remained closed
Right Side Door Opening	remained closed	remained closed
Seat Movement	none	none
Seat Back Failure	none	none

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No failures
Sill Separation	None noted
Windshield Damage	Broke
Window Damage	all impact side windows
Other Notable Effects	none

AIRBAG DEPLOYMENT

	Driver	Right Front	Left Rear
Front	yes	yes	
Side	yes	no	

MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	5 forward
Vertical Offset	mm	+/-20	2 down

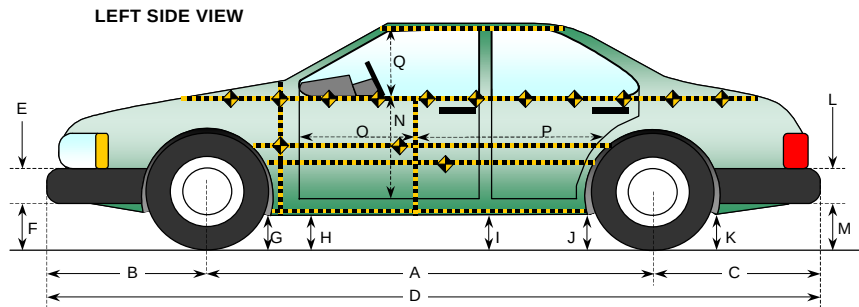
SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 5

VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001



All Measurements in mm

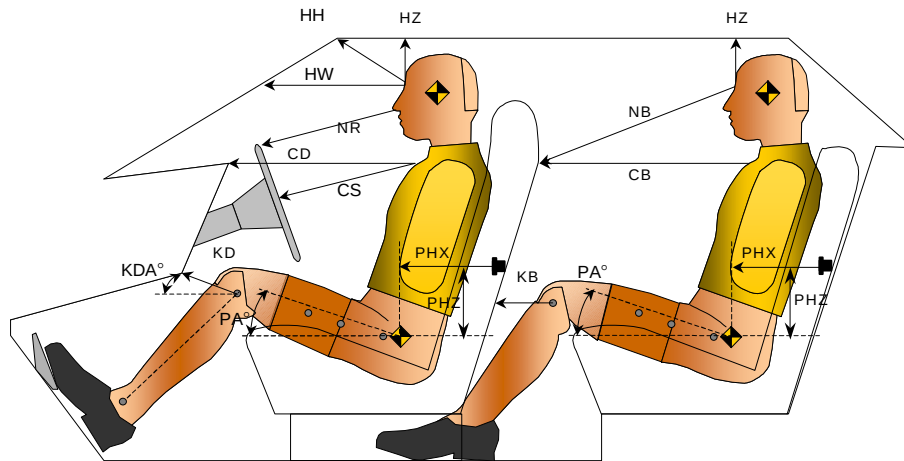
Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2854	2801	53
B	Front Axle to FSOV	1065	1008	57
C	Rear Axle to RSOV	1146	1229	-83
D	Total Length at Centerline	5065	5038	27
E	Front Bumper Thickness	165	165	0
F	Front Bumper Bottom to Ground	314	323	-9
G	Sill Height at Front Wheel Well	174	196	-22
H	Sill Height at Front Door Leading Edge	174	221	-47
I	Sill Height at "B" Pillar	163	266	-103
J1	Sill Height at Rear Wheel Well	150	142	8
J2	Pinch Weld Height at Rear Wheel Well	148	145	3
K	Sill Height Aft of Rear Wheel Well	192	199	-7
L	Rear Bumper Thickness	190	190	0
M	Rear Bumper Bottom to Ground	315	373	-58
N	Sill Height to Window Bottom Sill	715	651	64
O	Front Door Leading Edge to Impact CL	951	900	51
P	Rear Door Trailing Edge to Impact CL	1072	948	124
Q	Front Window Opening	460	465	-5
R	Right Side Length	4194	4209	-15
S	Left Side Length	4198	4128	70
T	Vehicle Width at "B" Post	1867	1671	196

DATA SHEET NO. 6

ES-2 LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001



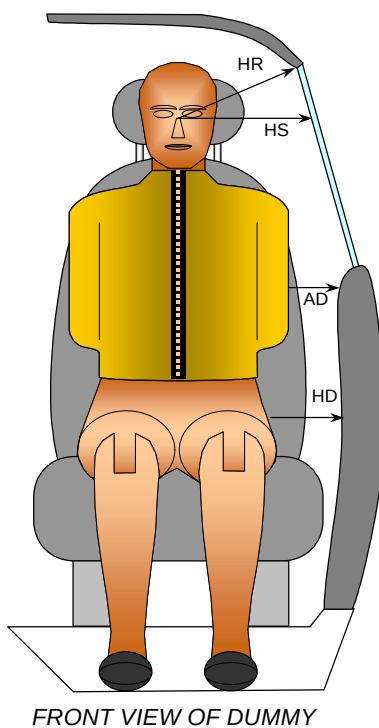
Driver Code	Pass. Code	Measurement Description	Left Front 009		Left Rear 010	
			Length(mm)	Angle(°)	Length(mm)	Angle(°)
HH		Head to Header	511			
HW		Head to Windshield	807			
HZ	HZ	Head to Roof	192		147	
NR	NB	Nose to Rim/Nose to Seatback	551		671	
CD	CB	Chest to Dash or Seatback	581		501	
CS		Chest to Steering Wheel	407			
KDL	KBL	Left Knee to Dash or Seatback	244	0	169	0
KDR	KBR	Right Knee to Dash or Seatback	226	0	188	0
PA	PA	Pelvic Angle (Longitudinal)		30.6		26.7
PA	PA	Pelvic Angle (Lateral)		0.9		0.2
SA	SA	Spine Angle (Longitudinal)		36.5		31.2
SA	SA	Spine Angle (Lateral)		0.4		0.4
PHX	PHX	H-Point to Striker (X-Axis)	191		331	
PHZ	PHZ	H-Point to Striker (Z-Axis)	129		316	

DATA SHEET NO. 7

ES-2 LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001



Code	Measurement Description	Units	Left Front 009	Left Rear 010
HR	Head to Side Header	mm	230	203
HS	Head to Side Window	mm	338	306
AD	Arm to Door	mm	103	101
HD	H-Point to Door	mm	197	152

DATA SHEET NO. 8

DUMMY POSITIONING

Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001

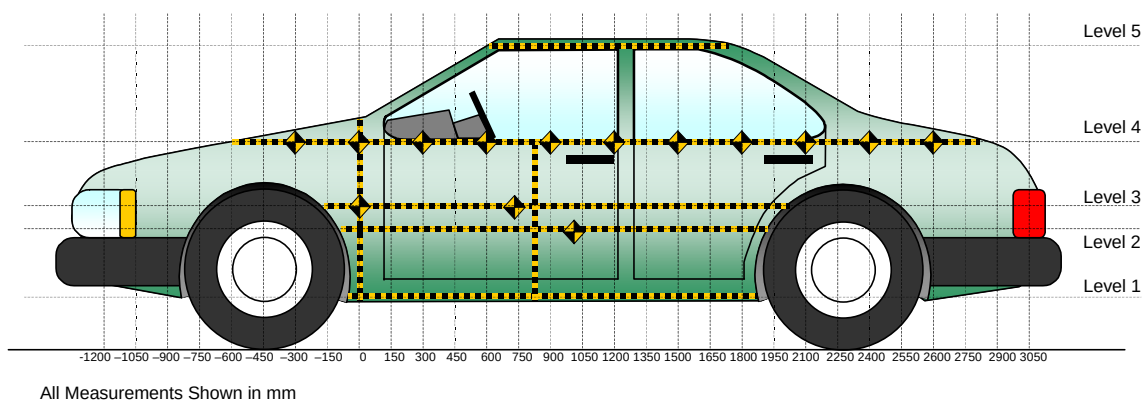
	Left Front S/N 009	Left Front S/N 009	Left Rear S/N 010	Left Rear S/N 010
	H-Point	Dummy	H-Point	Dummy
HP to Floor Z (mm)	130	141	104	101
HP to Hinge X (mm)	821	822	655	659
HP to Sill Y (mm)	161	169	166	167
HP to Striker X (mm)	369	369	549	545
HP to Dash X (mm)	611	610	580	580
HP to Header Z (mm)	788	776	779	770
H-POINT MACHINE (deg)				
Left Knee	140		131	
Right Knee	138		132	
Left Foot	113		130	
Right Foot	90		136	
Left Leg (mm)	155		102	
Right Leg (mm)	154		100	
Hip Angle	102		104	
Back Angle	30.0		29.5	

DATA SHEET NO. 9

VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001



LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.

Measurements along the vertical 800 mm.

Level	Measurement Description	Units	Height Above Ground
5	Window Top	mm	1343
4	Window Sill	mm	905
3	Mid Door	mm	582
2	Occupant H-Point	mm	475
1	Axle Centerline Height (or Sill Top)	mm	254

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001

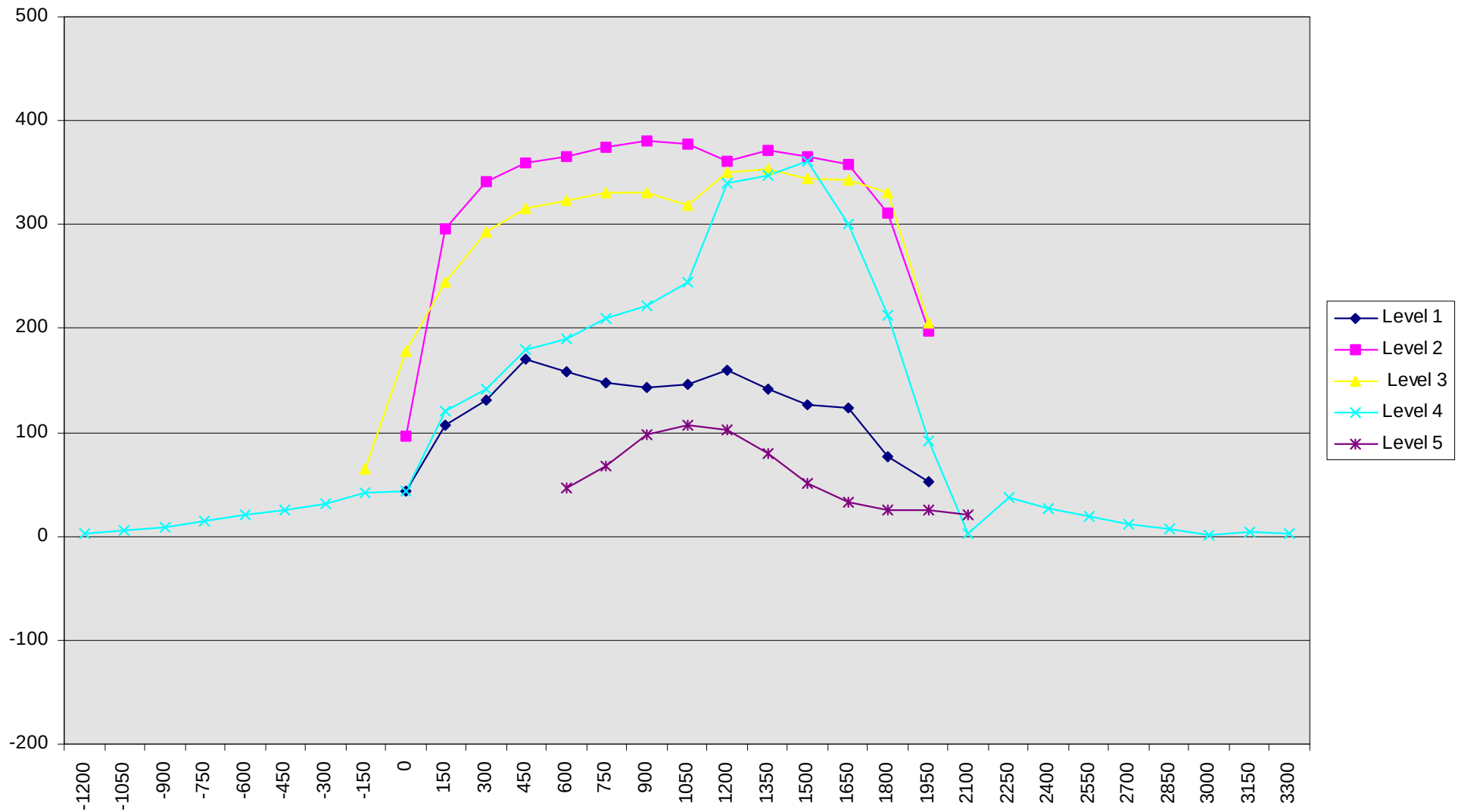
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1200				452					454					2	
-1050				428					433					5	
-900				413					421					8	
-750				397					411					14	
-600				386					406					20	
-450				380					405					25	
-300				376					407					31	
-150			308	375				373	417				65	42	
0	402	314	309	374		445	411	487	418		43	97	178	44	
150	406	316	304	373		513	612	549	493		107	296	245	120	
300	406	317	304	373		537	659	597	515		131	342	293	142	
450	406	318	306	375		576	678	622	554		170	360	316	179	
600	408	320	307	377	643	567	685	630	567	690	159	365	323	190	47
750	407	322	308	375	636	554	697	639	584	704	147	375	331	209	68
900	408	324	312	379	636	551	705	643	601	734	143	381	331	222	98
1050	404	326	314	379	637	550	703	633	623	744	146	377	319	244	107
1200	403	328	315	381	638	563	689	665	721	741	160	361	350	340	103
1350	406	328	316	381	636	548	699	669	728	716	142	371	353	347	80
1500	407	328	317	381	633	533	694	661	742	684	126	366	344	361	51
1650	404	326	317	381	631	527	684	660	682	664	123	358	343	301	33
1800	403	325	317	380	630	480	636	648	593	656	77	311	331	213	26
1950	395	326	320	380	633	447	524	525	472	658	52	198	205	92	25
2100				382	639				380	660				2	21
2250				387					424					37	
2400				395					422					27	
2550				402					421					19	
2700				415					426					11	
2850				430					437					7	
3000				447					446					1	
3150				468					464					4	
3300				504					507					3	

DATA SHEET NO. 10...(continued)

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001

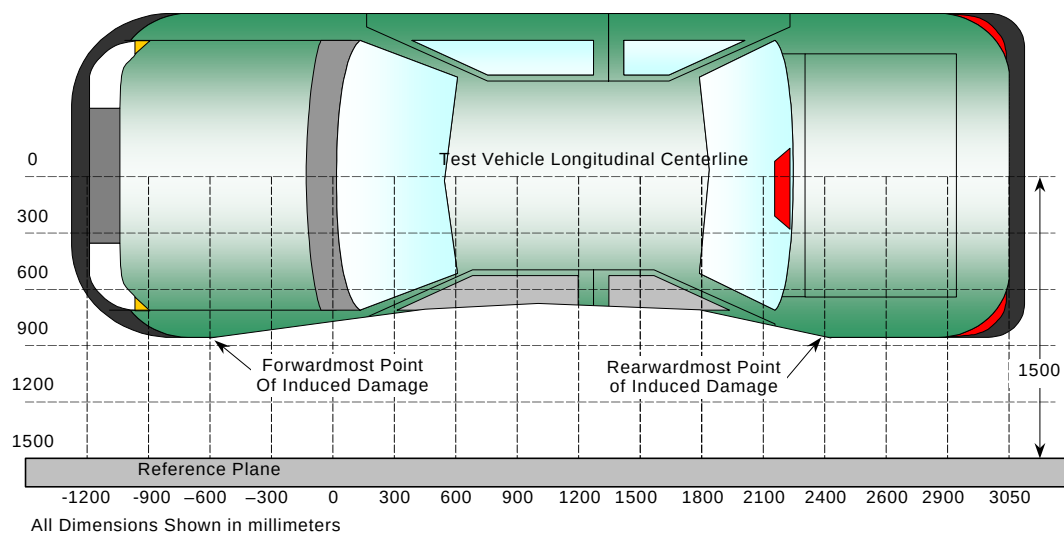


DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001



TOP VIEW

Damage Profile Distances

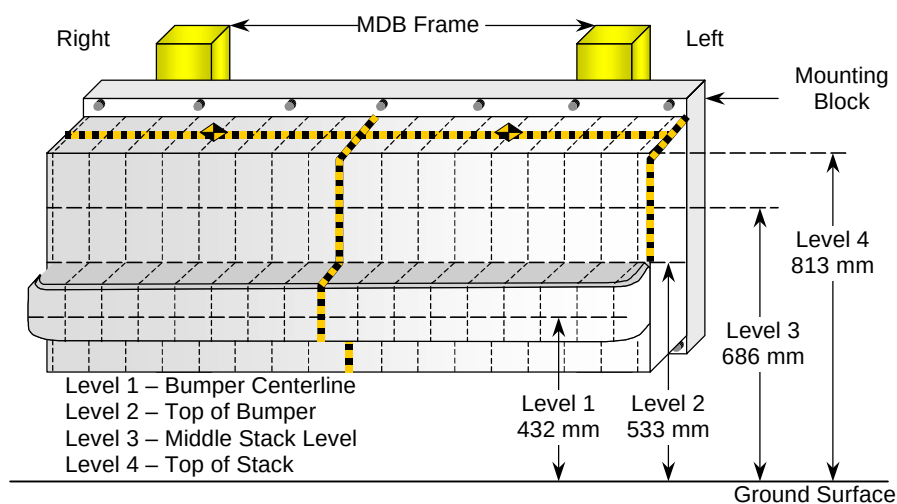
DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1	2850 mm	4	446	446	0
2	2040	4	472	380	92
3	1250	2	694	328	366
4	420	2	668	318	350
5	-390	4	406	378	28
6	-1200	4	454	454	0

DATA SHEET NO. 12

DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001



DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center								C _L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
4	47	6	6	2	15	16	25	24	24	26	39	49	56	71	91	124	153
3	22	9	2	2	8	11	16	25	19	18	21	27	35	45	59	78	107
2	61	56	57	56	58	62	59	57	55	62	62	67	74	75	78	83	99
1	117	109	103	100	103	115	113	102	102	105	108	111	115	119	126	140	161

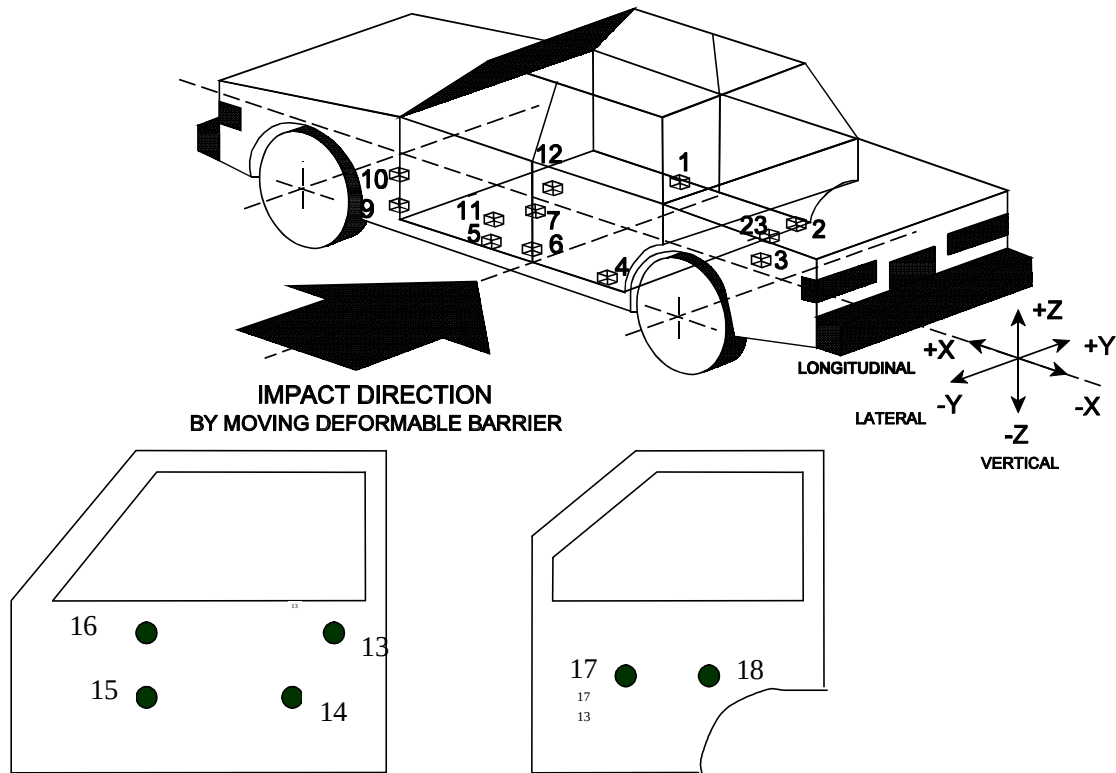
All Dimensions in mm

DATA SHEET NO. 13

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001



No.	Location
1	Right Side Sill at Front Seat
2	Right Side Sill at Rear Seat
3	Rear Floorpan Above Axle
4	Left Side Sill at Rear Door
5	Left Side Sill at Front Door
6	Left Lower B Post
7	Left Mid B Post
9	Left Lower A Post
10	Left Mid A Post
11	Driver Seat Track
12	Vehicle CG
13	Left Front Door @ Mid Rib

No.	Location
14	Left Front Door @ Pelvis
16	Left Front Door @ Arm
17	Left Rear Door @ Mid Rib
18	Left Rear Door @ Pelvis
19	Left Rear Door @ Knee
20	Left Rear Door @ Arm
23	Right Rear Occupant Compartment

DATA SHEET NO. 13...(continued)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001

VEHICLE ACCELEROMETER PEAK DATA

Loc. No.	Accelerometer Location	Long. (X) Maximums (g's) (CFC 60)		Lat. (Y) Maximums (g's) (CFC 60)		Vert. (Z) Maximums (g's) (CFC 60)		Resultant (g's) (CFC 60)
		Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Max.
1	Right Side Sill at Front Seat	2.2	5.8	16.9	2.1	5.6	5.6	17.9
2	Right Side Sill at Rear Seat	2.6	4.0	22.5	2.5	6.3	8.2	23.3
3	Rear Floorpan Above Axle	4.9	8.3	17.6	1.9	15.2	8.2	19.7
4	Left Side Sill at Rear Door			49.9	18.8			
5	Left Side Sill at Front Door			45.6	13.2			
6	Left Lower B Post			51.1	39.3			
7	Left Mid B Post			NVD	NVD			
9	Left Lower A Post			73.2	9.6			
10	Left Mid A Post			37.9	18.6			
11	Driver Left Seat Track			56.1	30.4			
12	Vehicle CG	4.4	7.0	28.2	2.1	13.7	15.8	28.9
13	Left Front Door @ Mid Rib			159.6	56.4			
14	Left Front Door @ Pelvis			181.1	89.8			
16	Left Front Door @ Arm			130.2	61.1			
17	Left Rear Door @ Mid Rib			176.8	73.9			
18	Left Rear Door @ Pelvis			87.1	30.0			
19	Left Rear Door @ Knee			186.8	60.7			
20	Left Rear Door @ Arm			152.2	57.7			
23	Right Rear Occupant Compartment			17.1	2.0			

DATA SHEET NO. 13...(continued)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001

VEHICLE ACCELEROMETER COORDINATES

Loc. No.	Description	Coordinates (mm)*		
		X	Y	Z
1	Right Side Sill at Front Seat	2723	766	224
2	Right Side Sill at Rear Seat	1598	766	225
3	Rear Floorpan Above Axle	1030	0	535
4	Left Side Sill at Rear Door	1618	-766	223
5	Left Side Sill at Front Door	2722	-766	223
6	Left Lower B Post	2277	-702	337
7	Left Mid B Post	2350	-727	912
9	Left Lower A Post	3320	-726	335
10	Left Mid A Post	3465	-820	850
11	Driver Left Seat Track	2450	-618	330
12	Vehicle CG	2986	0	405
13	Left Front Door @ Mid Rib	2548	-786	935
14	Left Front Door @ Pelvis	2602	-766	595
16	Left Front Door @ Arm	2794	-789	921
17	Left Rear Door @ Mid Rib	1713	-754	982
18	Left Rear Door @ Pelvis	1693	-780	640
19	Left Rear Door @ Knee	2228	-782	658
20	Left Rear Door @ Arm	1876	-754	960
23	Right Rear Occupant Compartment	2040	358	347

Reference Points X - Rear Bumper (+ Forward)
 Y - Vehicle Centerline (+ to right)
 Z - Ground Level (+ up)

DATA SHEET NO. 14

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

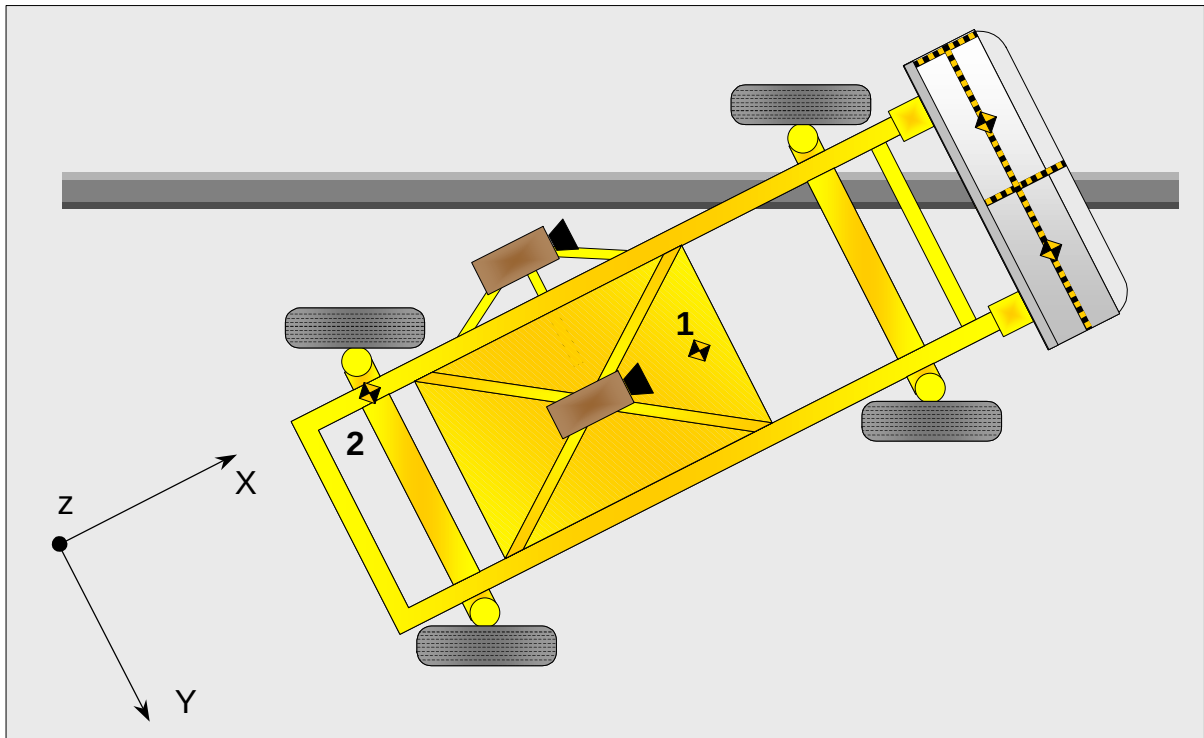
Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001

MDB ACCELEROMETER PEAK DATA AND LOCATIONS

Loc. No.	Accelerometer Location	Measurement (mm)			Peak Values (G's)				
		X	Y	Z	Axis	Max	Time	Min	Time
1	MDB CG	-1092	0	483	X	1.4	180	16.9	43
					Y	2.1	64	8.5	32
					Z	22.9	58	12.8	64
					RES	24.8	35		
2	MDB Rear	-2591	-625	622	X	2.0	134	21.8	32
					Y	7.7	29	2.1	175

Reference Points
 X - MDB Front Axle (+ Forward)
 Y - MDB Centerline (+ Right)
 Z - Ground Plane (+ Up)

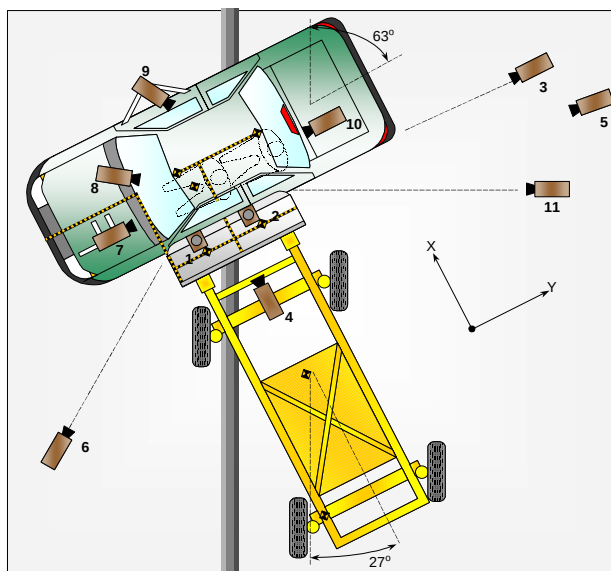


DATA SHEET NO. 15

HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2001 Buick LeSabre 4 door

Test Date: October 26, 2001



No.	Camera View	Location (mm)			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Overhead Overall	-140	1210	5000	8	873
2	Overhead Close-up	-500	-260	5000	13	1070
3	Right LoCam	-500	10600	1950	25	495
4	MDB Onboard, Centerline of Impact				13	909
5	MDB Impact				25	1000
6	Left Side Overall	-9940	-1000	1870	25	1010
7	Vehicle Onboard Front SID, Front				13	514
8	Vehicle Onboard Front SID, Hip to Door				13	500
9	Vehicle Onboard Rear SID, Hip to Door				13	503
10	Vehicle Onboard Rear SID, Rear				7.5	500
11	Real Time				13	32

Reference Points X - + Forward of Impact

Y - +Right of Impact

Z - + Up from Ground

APPENDIX A

PHOTOGRAPHS

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Photo No. A-1 - Pre-Test Front View of Test Vehicle

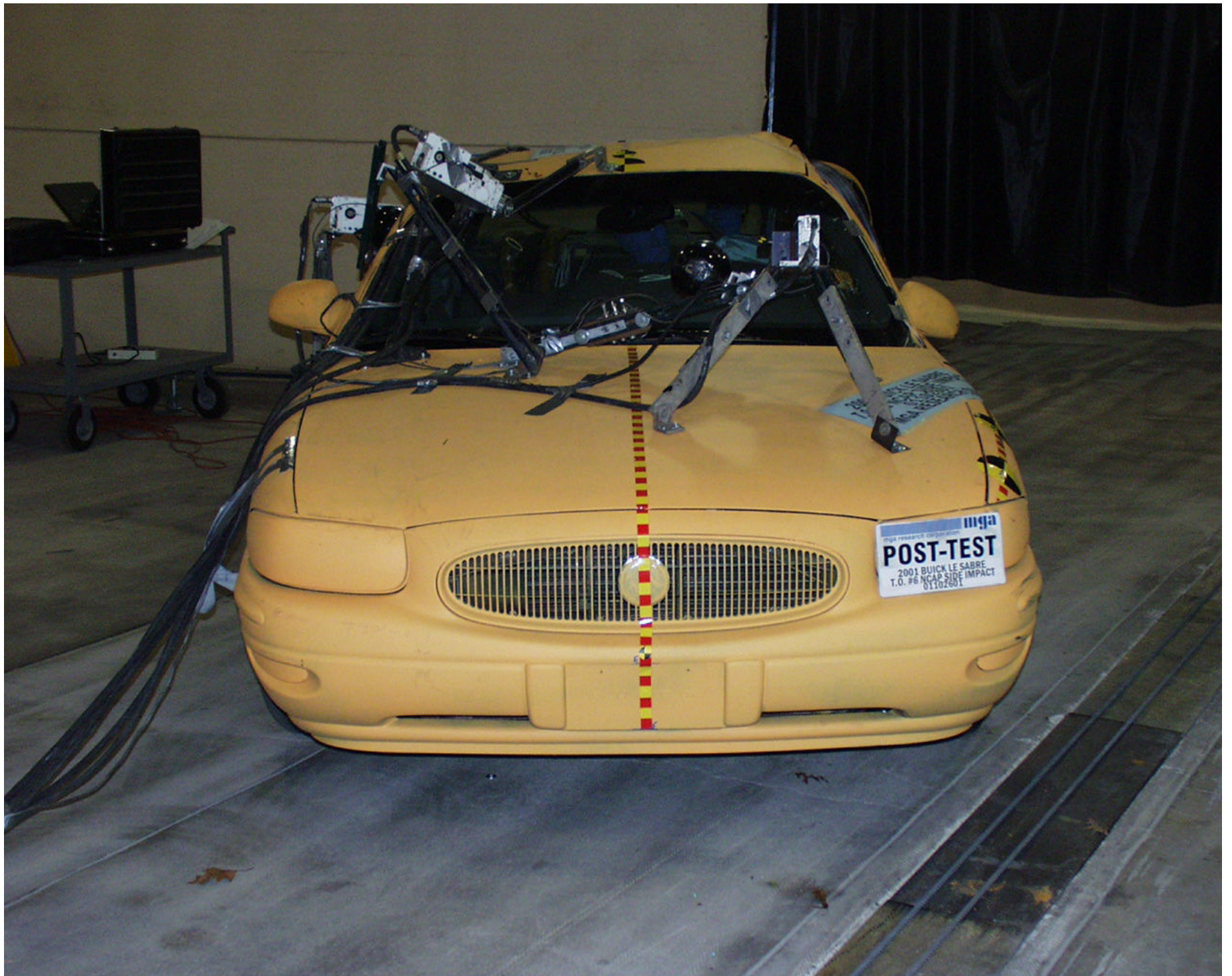


Photo No. A-2 - Post-Test Front View of Test Vehicle



Photo No. A-3 - Pre-Test Rear View of Test Vehicle



Photo No. A-4 - Post-Test Rear View of Test Vehicle

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Photo No. A-5 - Post-Test Left Side View of Test Vehicle



Photo No. A-6 - Pre-Test MDB Positioned Against Vehicle (left side)



Photo No. A-7 - Pre-Test MDB Positioned Against Vehicle (right side)



Photo No. A-8 - Pre-Test MDB Positioned Against Vehicle Overhead View



Photo No. A-9 -Post-Test MDB and Vehicle (left side)

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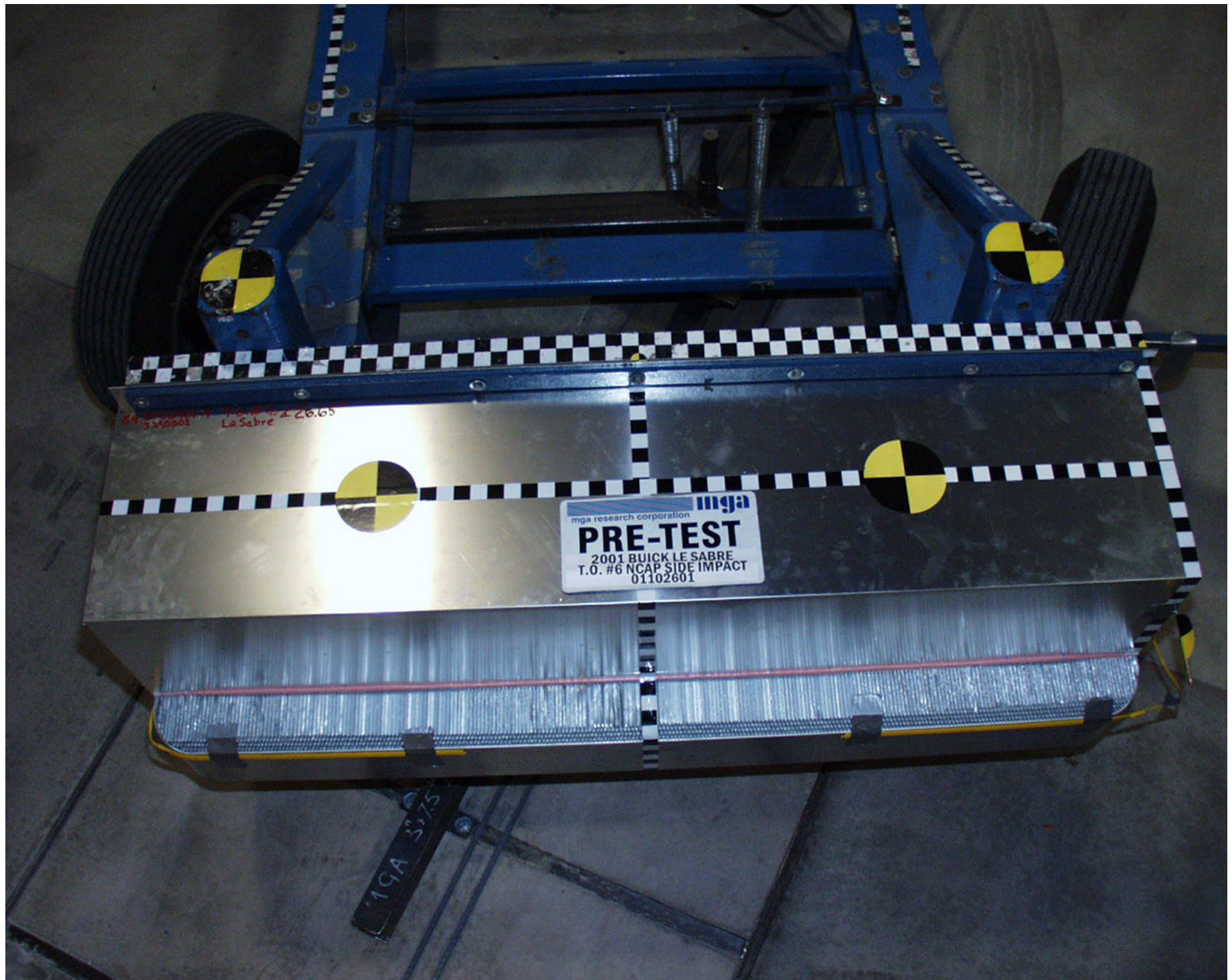


Photo No. A-10 - Pre-Test MDB Top View



Photo No. A-11 - Post-Test MDB Top View

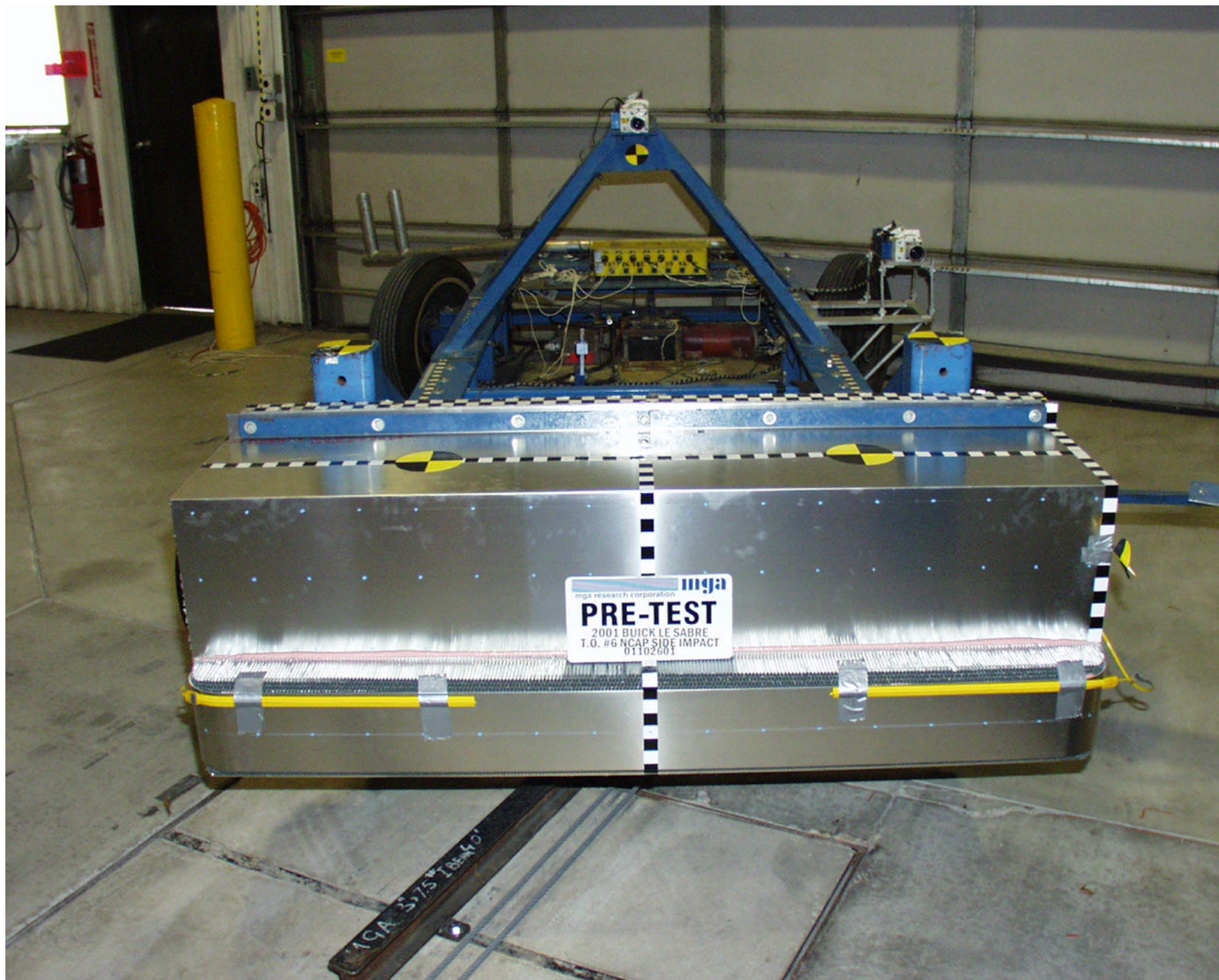


Photo No. A-12 - Pre-Test MDB Front View



Photo No. A-13 - Post-Test MDB Front View



Photo No. A-14 - Pre-Test MDB Right Side View



Photo No. A-15 - Post-Test MDB Right Side View



Photo No. A-16 - Pre-Test MDB Left Side View



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Photo No. A-18 - Pre-Test Driver Dummy Left Side View



Photo No. A-19 - Post-Test Driver Dummy Left Side View



Photo No. A-20 - Pre-Test Driver Dummy Left Side View (Door Open)

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Photo No. A-21 - Pre-Test Driver Dummy Right Side View



Photo No. A-22 - Post-Test Driver Dummy Right Side View



Photo No. A-23 - Pre-Test Driver Dummy Shoulder and Door Top View



Photo No. A-24 - Post-Test Driver Dummy Shoulder and Door Top View

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Photo No. A-25 - Pre-Test Passenger Dummy Left Side View



Photo No. A-26 - Post-Test Passenger Dummy Left Side View



Photo No. A-27 - Pre-Test Passenger Dummy Left Side View (Door Open)



Photo No. A-28 - Pre-Test Passenger Dummy Right Side View



Photo No. A-29 - Post-Test Passenger Dummy Right Side View



Photo No. A-30 - Pre-Test Passenger Dummy Shoulder and Door Top View



Photo No. A-31 - Post-Test Passenger Dummy Shoulder and Door Top View



Photo No. A-32 - Post-Test Driver Dummy Contact



Photo No. A-33 - Post-Test Driver Dummy Side Airbag



Photo No. A-34 - Post-Test Driver Head Contact View



Photo No. A-35 - Post-Test Passenger Head Contact View

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Photo No. A-36 - Post-Test Passenger Contact



Photo No. A-37 – Impact



Photo No. A-38 - Pre-Test Impact Point

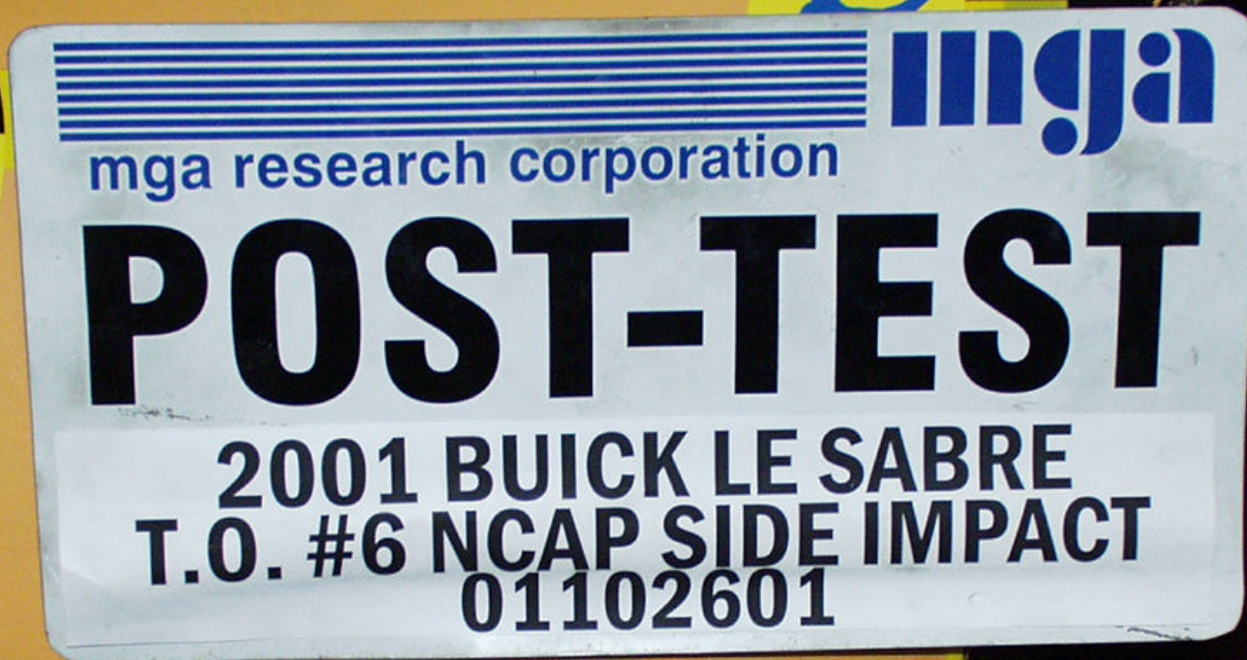


Photo No. A-39 - Post-Test Impact Point



TIRE - LOADING INFORMATION

OCCUPANTS

FRT.	CTR.	RR.	TOTAL
3	0	3	6

VEHICLE CAP. WT.

KG	LBS
488	1076

MAX. LOADING @ GVWR SAME AS VEHICLE CAPACITY WEIGHT.

1G4HP54K514277692

MODEL: HP69 HBL

	TIRE SIZE	SPEED RTG	COLD TIRE PRESSURE
FRT	P215/70R15	S	230KPA(33PSI)
RR	P215/70R15	S	230KPA(33PSI)
SPA	T125/70R16	M	420KPA(60PSI)

IF TIRES ARE HOT, ADD 28KPA(4PSI)

SEE OWNER'S MANUAL FOR MORE INFORMATION

Photo No. A-40 - Tire Placard



MFD BY GENERAL MOTORS CORP

DATE
05/01

GVWR
2127 KG
4687 LB

GAWR FRT
1142 KG
2517 LB

GAWR RR
985 KG
2170 LB

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR
VEHICLE SAFETY, BUMPER, AND THEFT PREVENTION STANDARDS IN
EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

1G4HP54K514277692

TYPE: PASS CAR

Photo No. A-41 - Vehicle Certification Label

APPENDIX B

ES-2, VEHICLE, AND MDB RESPONSE DATA

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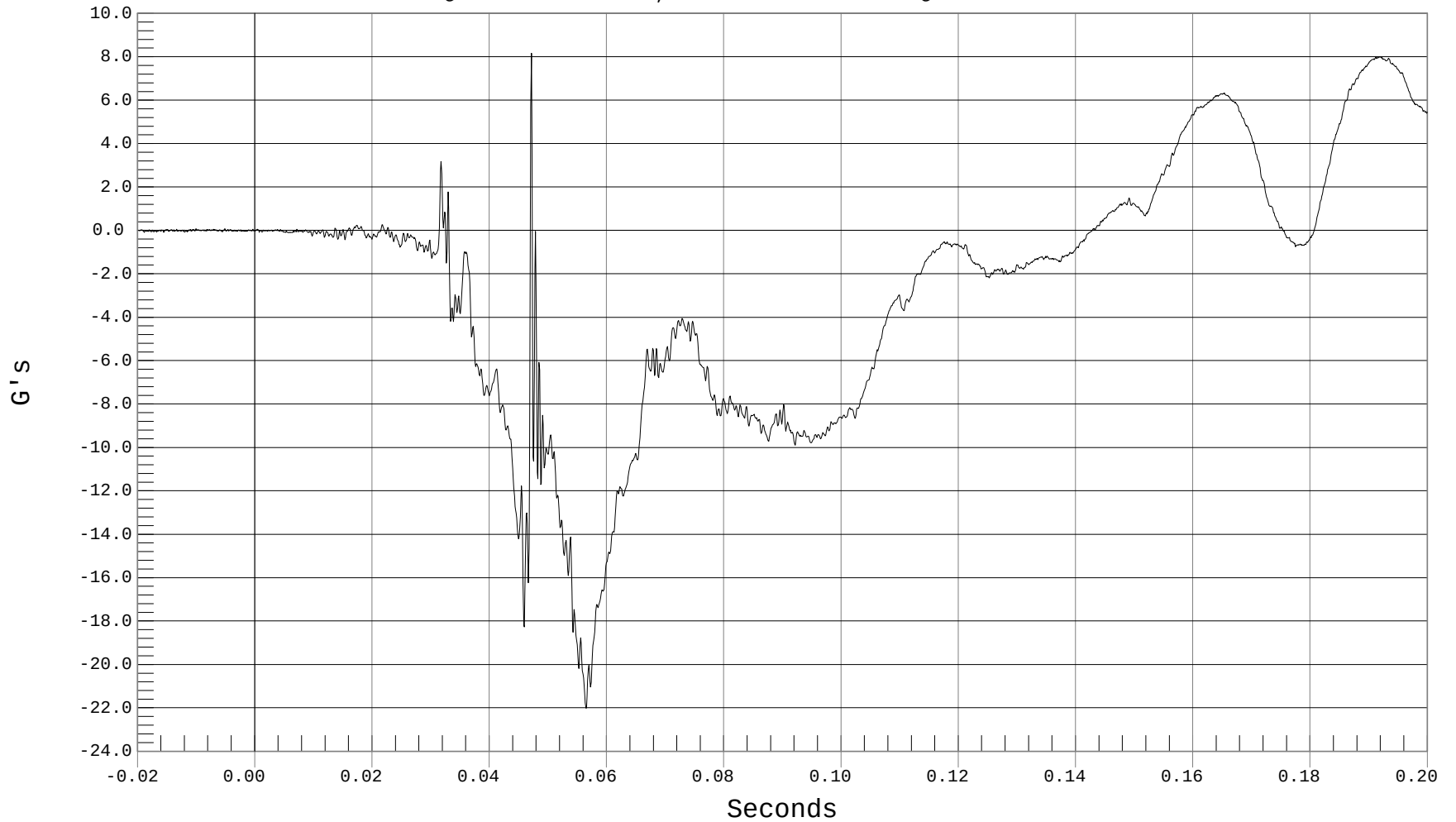
DRIVER HEAD CG X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD CG X, B01110AT.A01

Ymin = -22.02 G's @ 0.0564 Seconds, Ymax = 8.16 G's @ 0.0471 Seconds





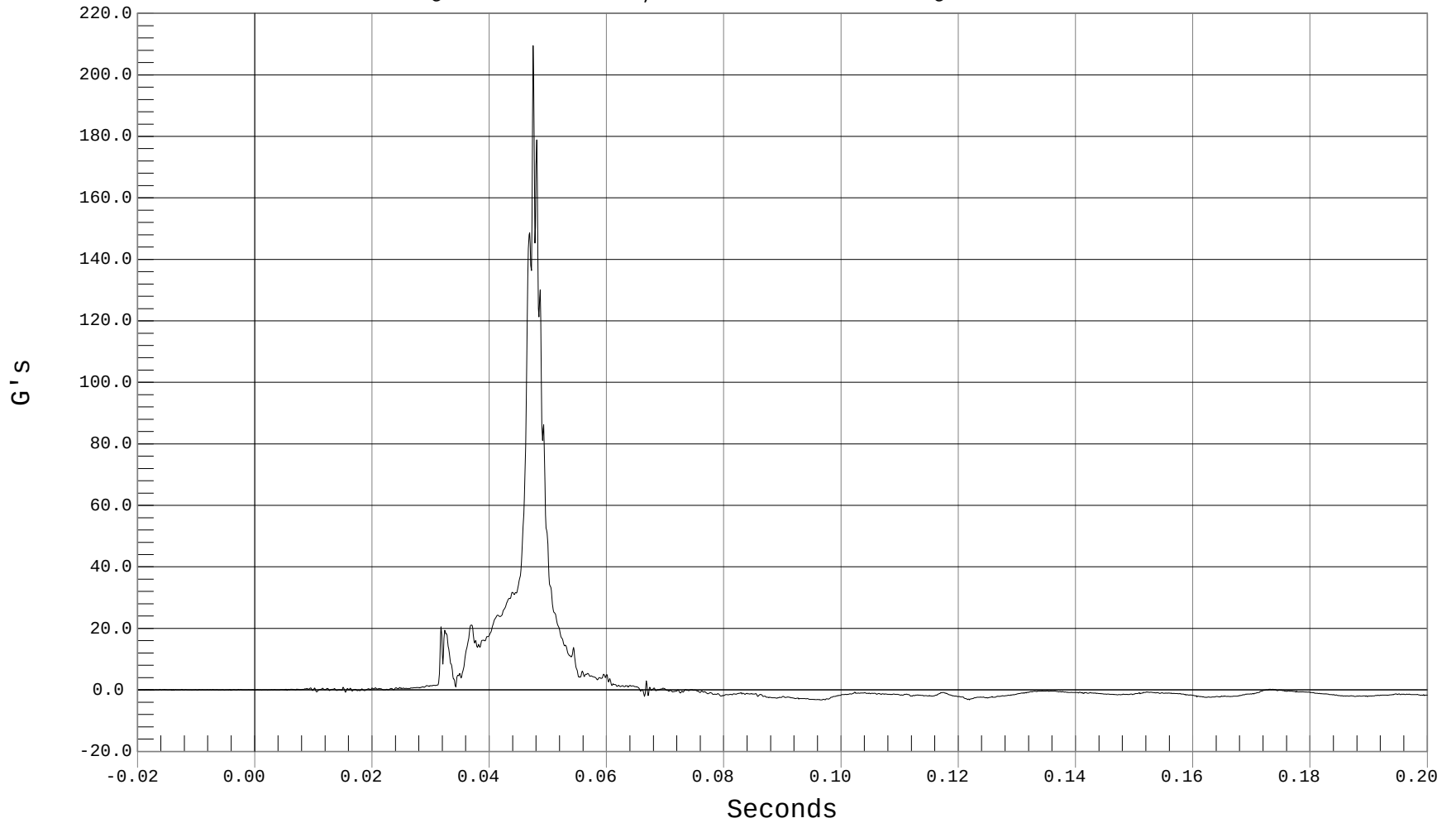
DRIVER HEAD CG Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD CG Y, B01110AT.A02

Ymin = -3.28 G's @ 0.0964 Seconds, Ymax = 209.48 G's @ 0.0474 Seconds





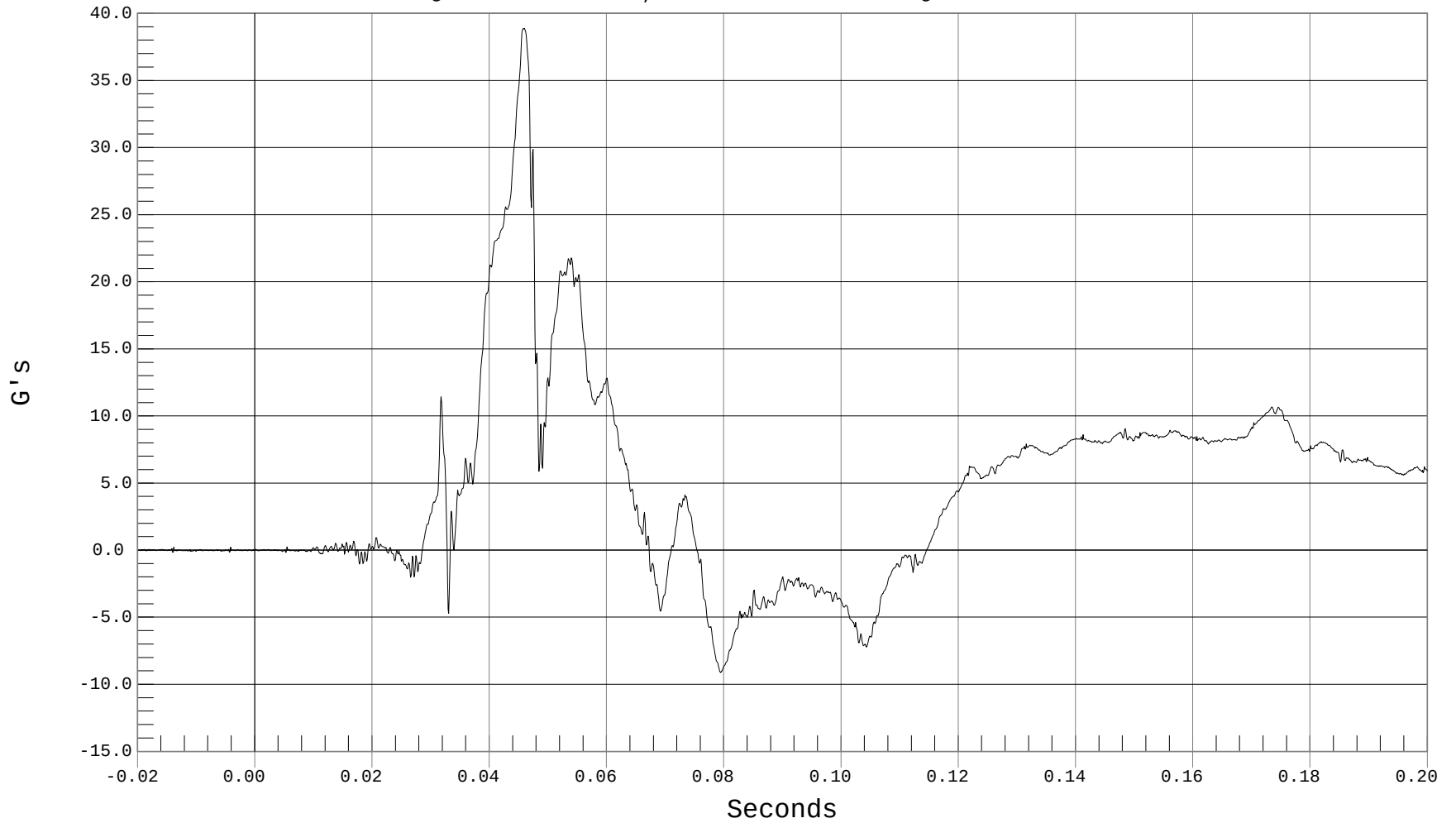
DRIVER HEAD CG Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD CG Z, B01110AT.A03

Ymin = -9.13 G's @ 0.0794 Seconds, Ymax = 38.89 G's @ 0.0459 Seconds





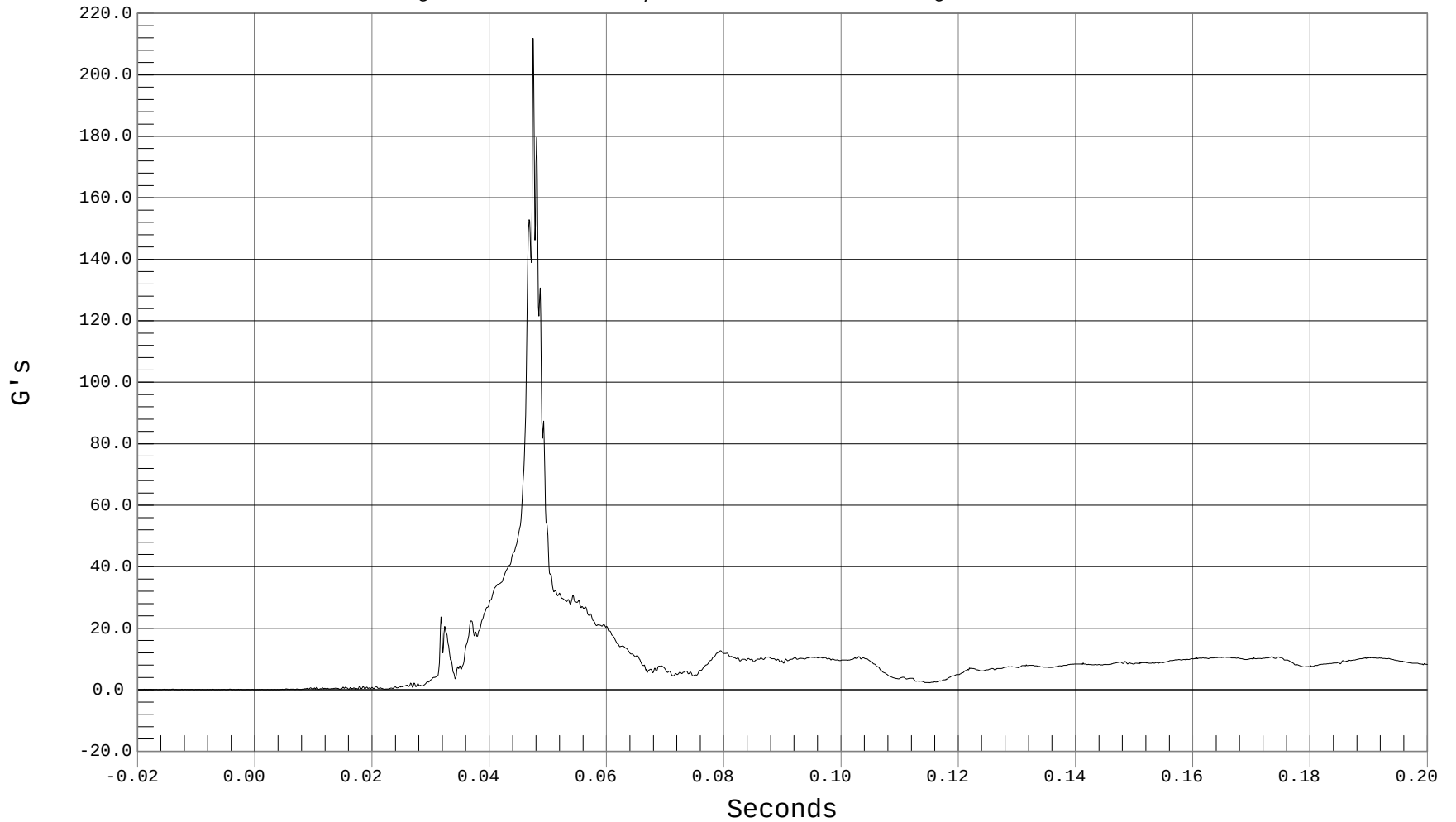
DRIVER HEAD CG RESULTANT ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD RESULTANT, B01110AV.A01

Ymin = .02 G's @ -0.0129 Seconds, Ymax = 211.86 G's @ 0.0474 Seconds





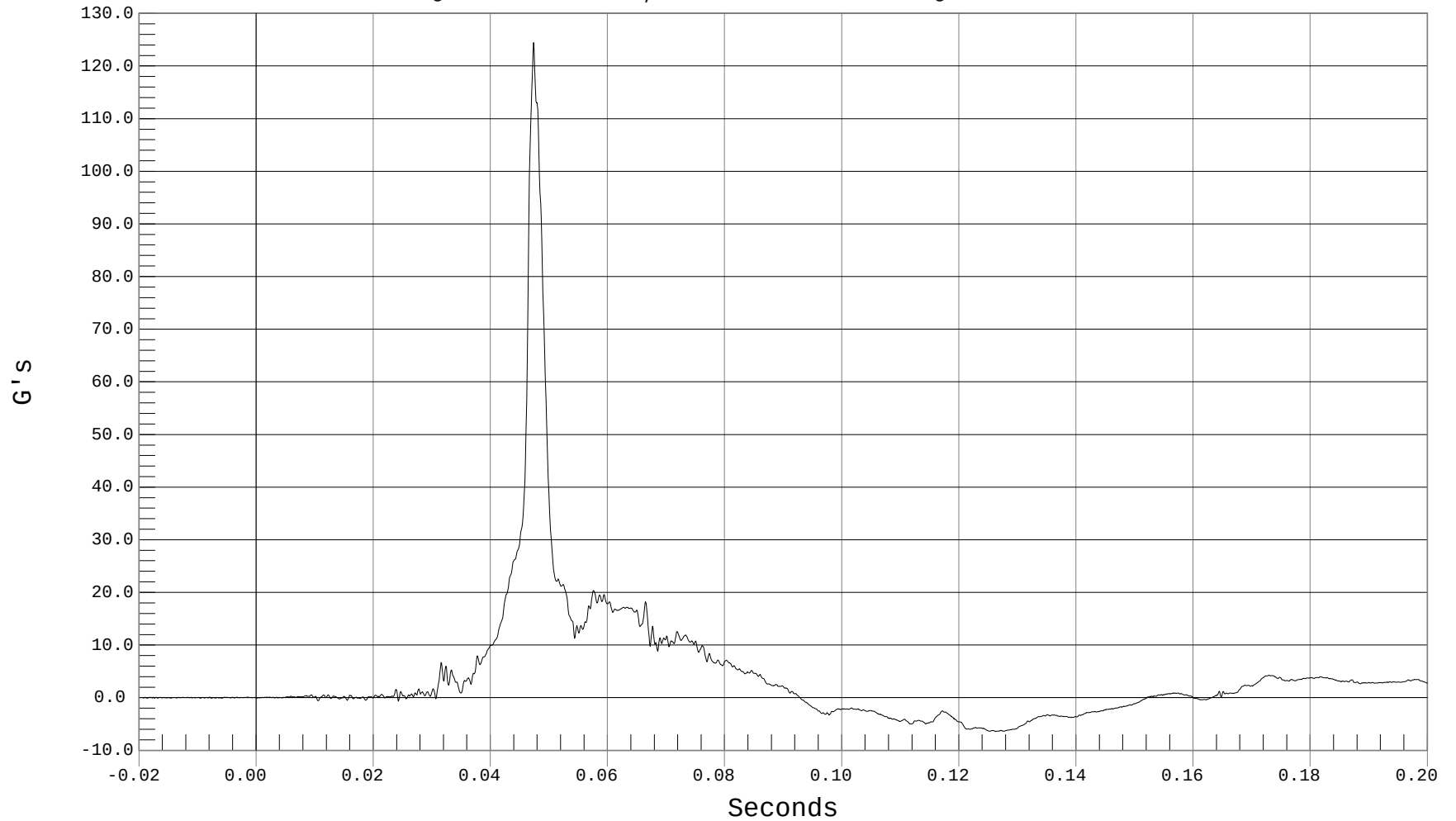
DRIVER HEAD FRONT Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD FRONT Y, B01110AT.A70

Ymin = -6.44 G's @ 0.1262 Seconds, Ymax = 124.46 G's @ 0.0473 Seconds





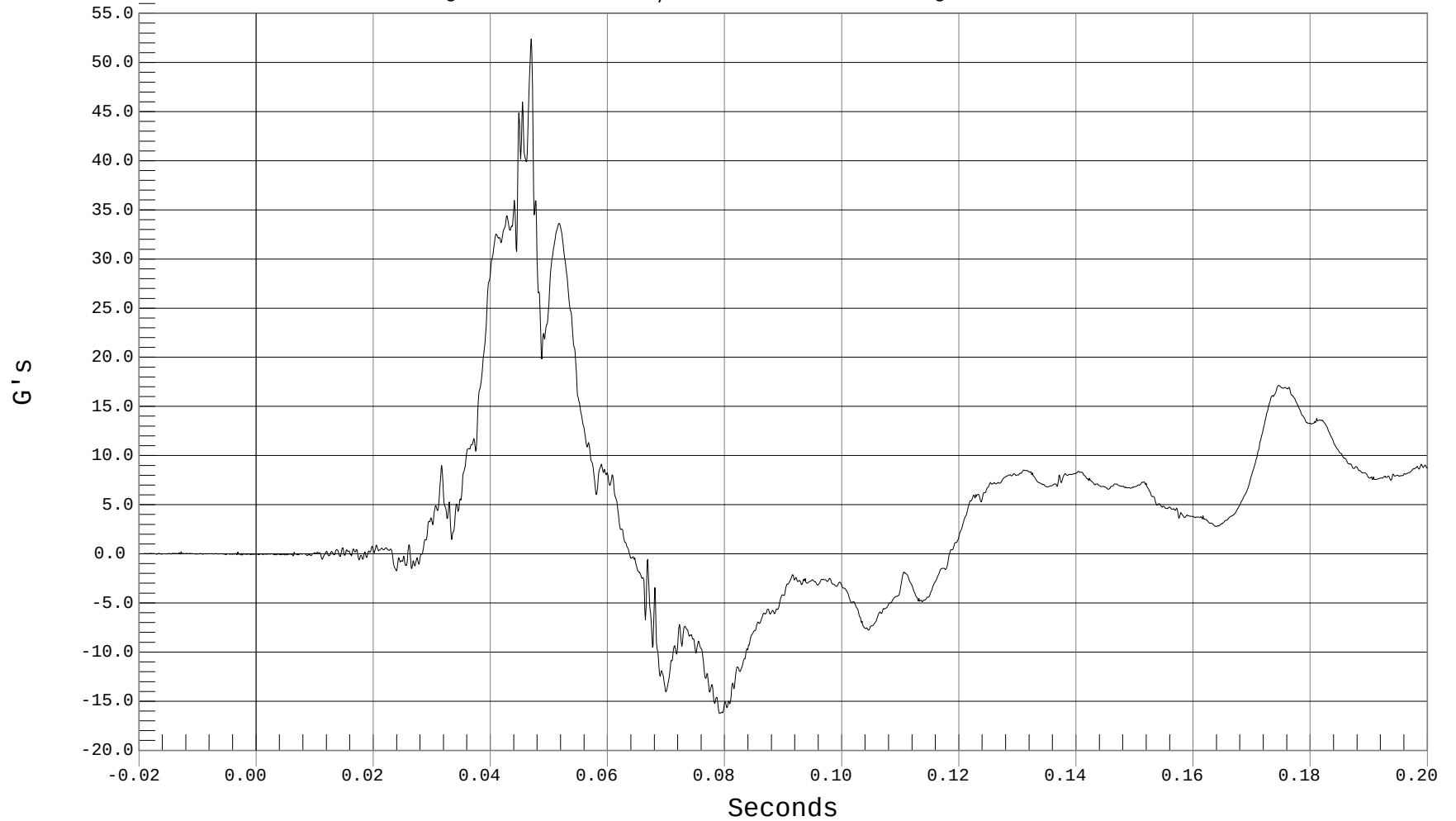
DRIVER HEAD FRONT Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD FRONT Z, B01110AT.A71

Ymin = -16.25 G's @ 0.0791 Seconds, Ymax = 52.39 G's @ 0.0469 Seconds





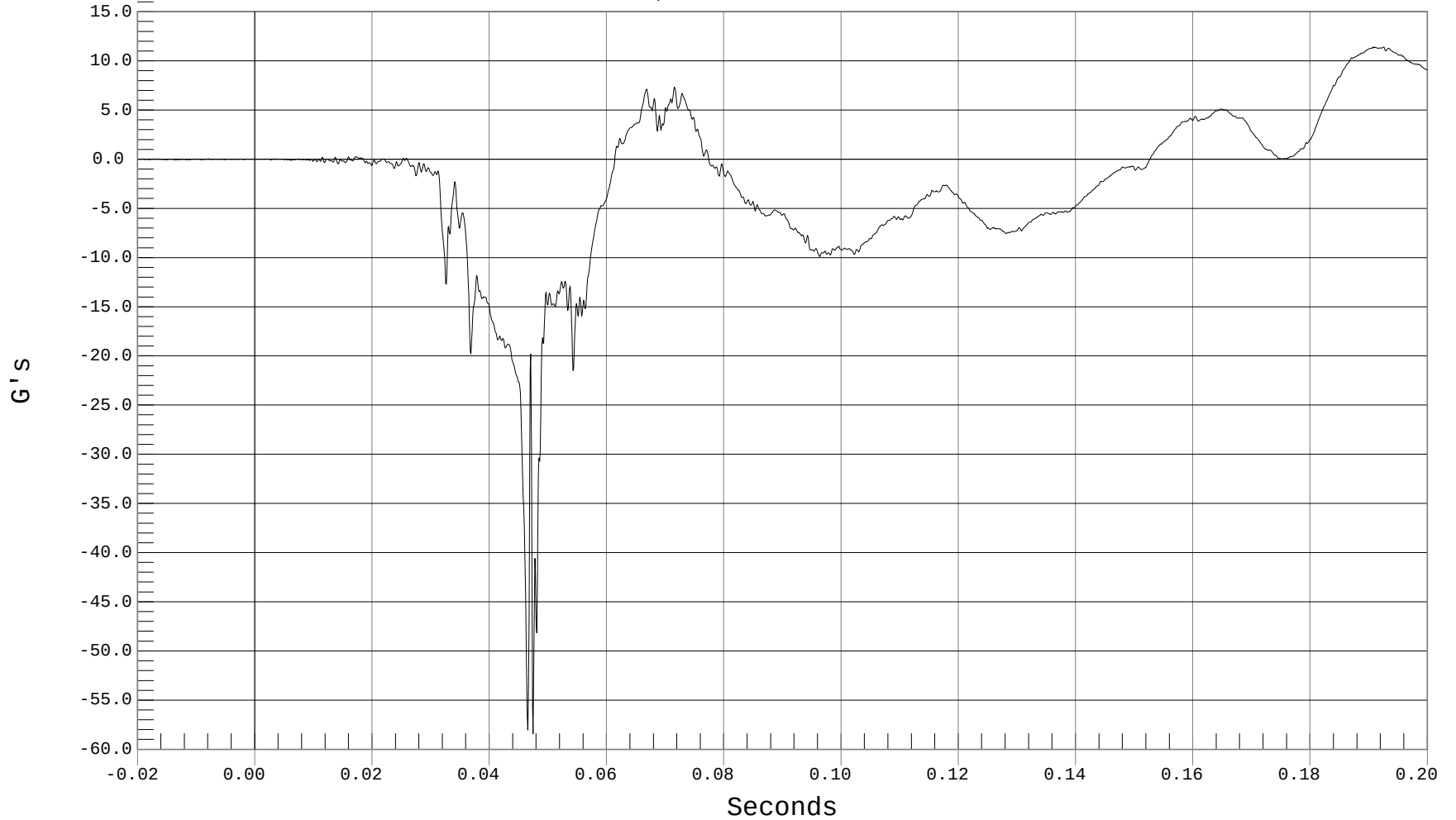
DRIVER HEAD LEFT X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD LEFT X, B01110AT.A72

Ymin = -58.43 G's @ 0.0474 Seconds, Ymax = 11.42 G's @ 0.1924 Seconds





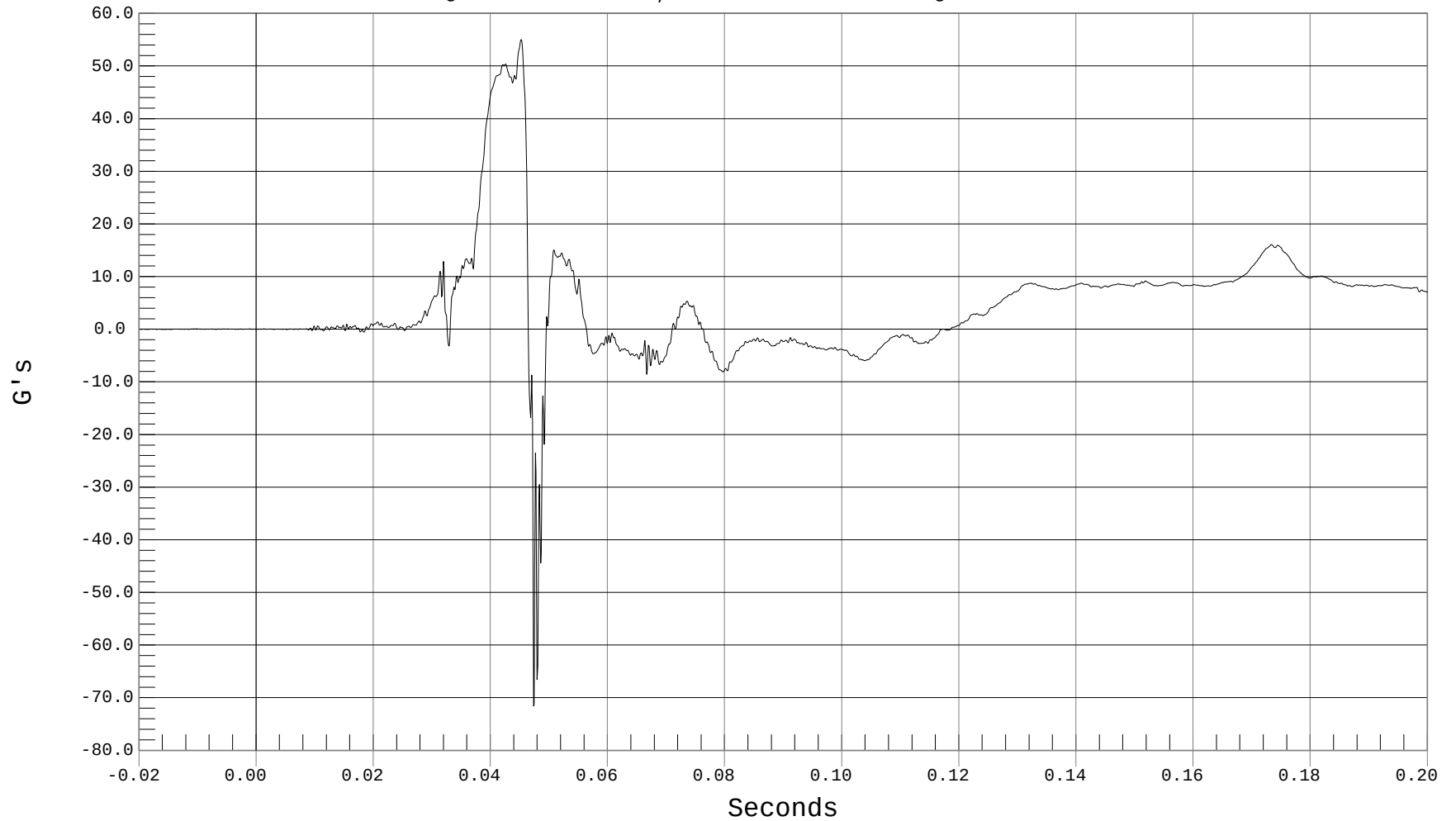
DRIVER HEAD LEFT Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD LEFT Z, B01110AT.A73

Ymin = -71.56 G's @ 0.0473 Seconds, Ymax = 55.01 G's @ 0.0452 Seconds





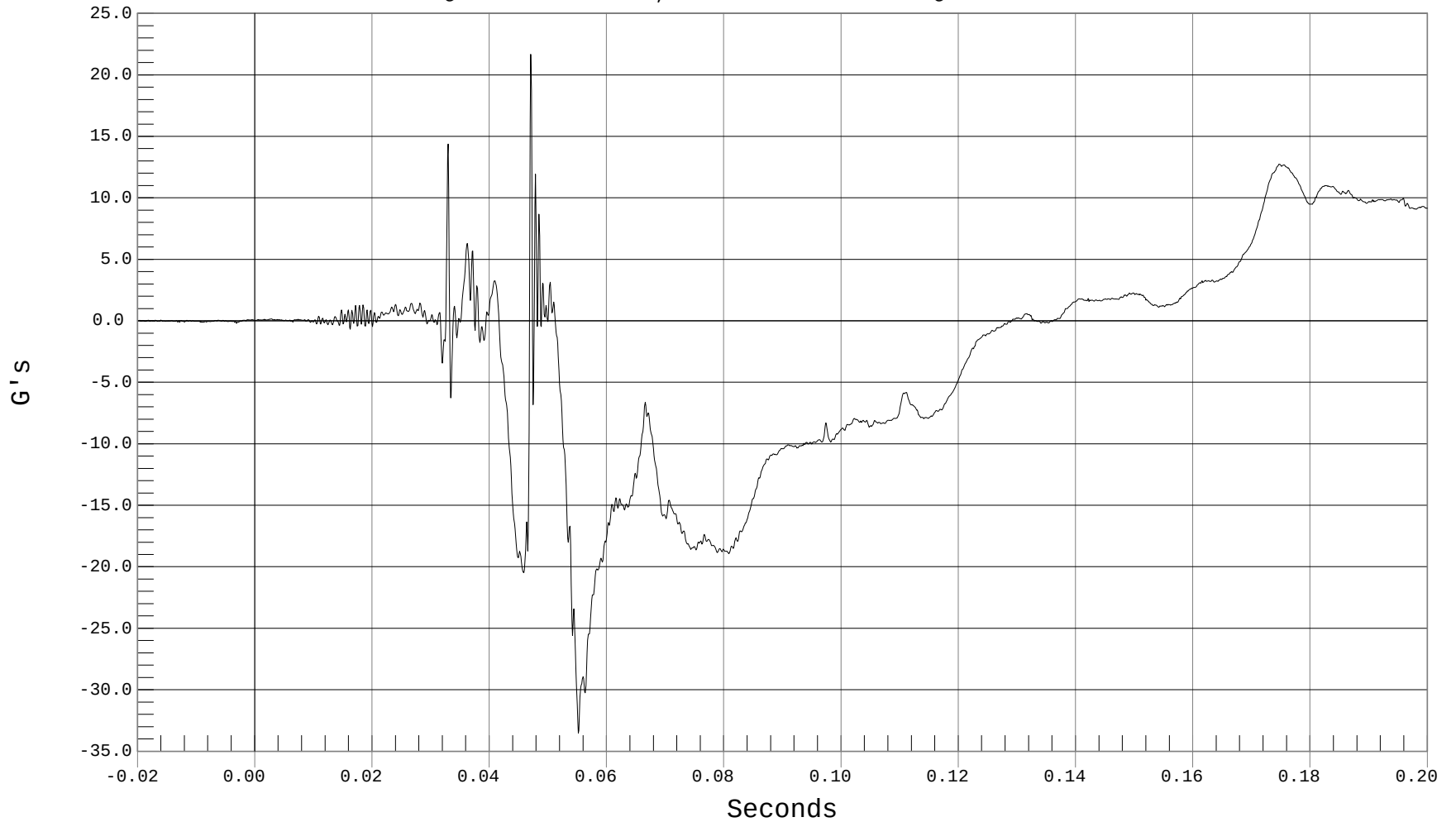
DRIVER HEAD TOP X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD TOP X, B01110AT.A74

Ymin = -33.52 G's @ 0.0551 Seconds, Ymax = 21.66 G's @ 0.0470 Seconds





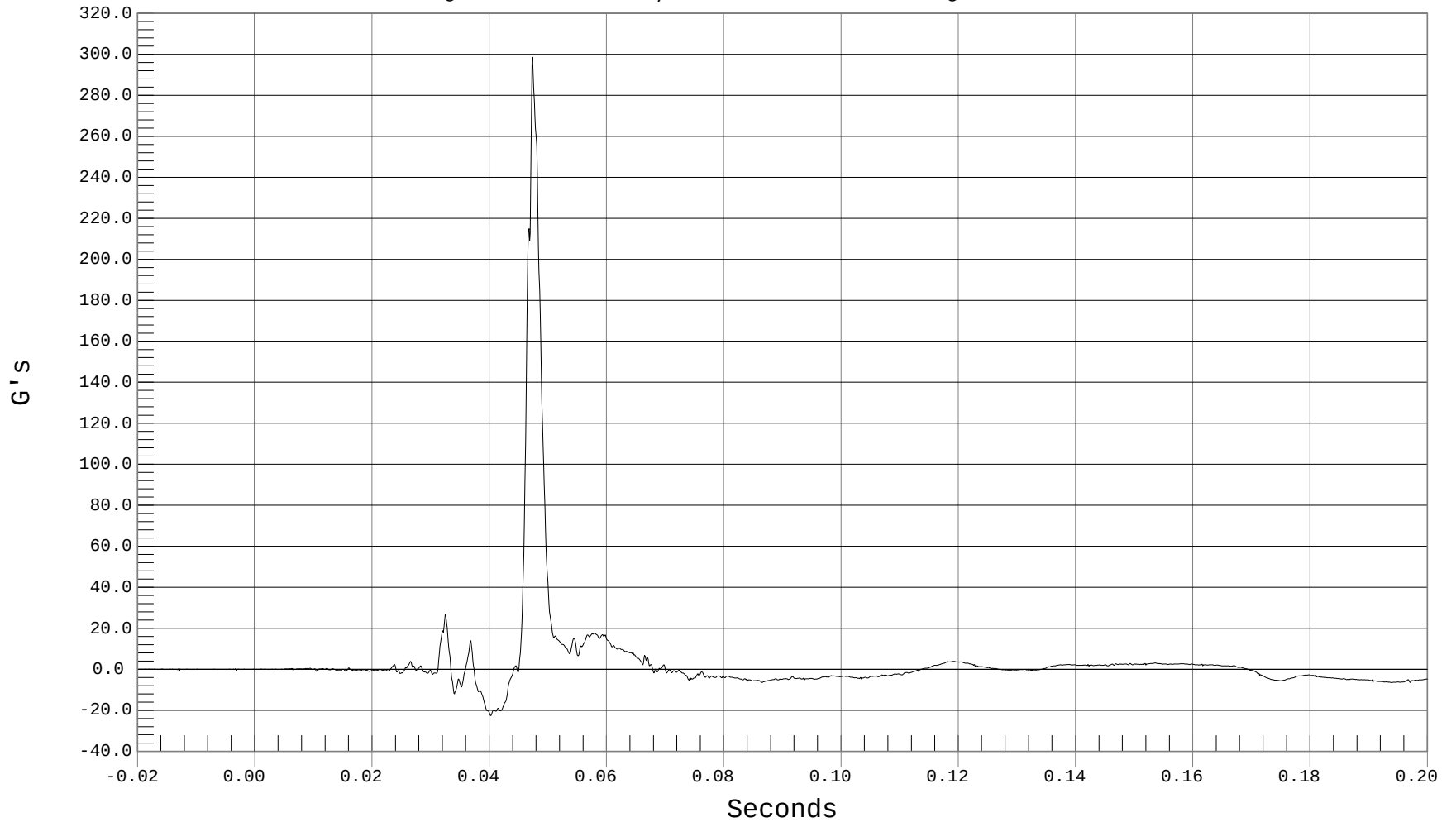
DRIVER HEAD TOP Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD TOP Y, B01110AT.A75

Ymin = -22.62 G's @ 0.0402 Seconds, Ymax = 298.57 G's @ 0.0473 Seconds





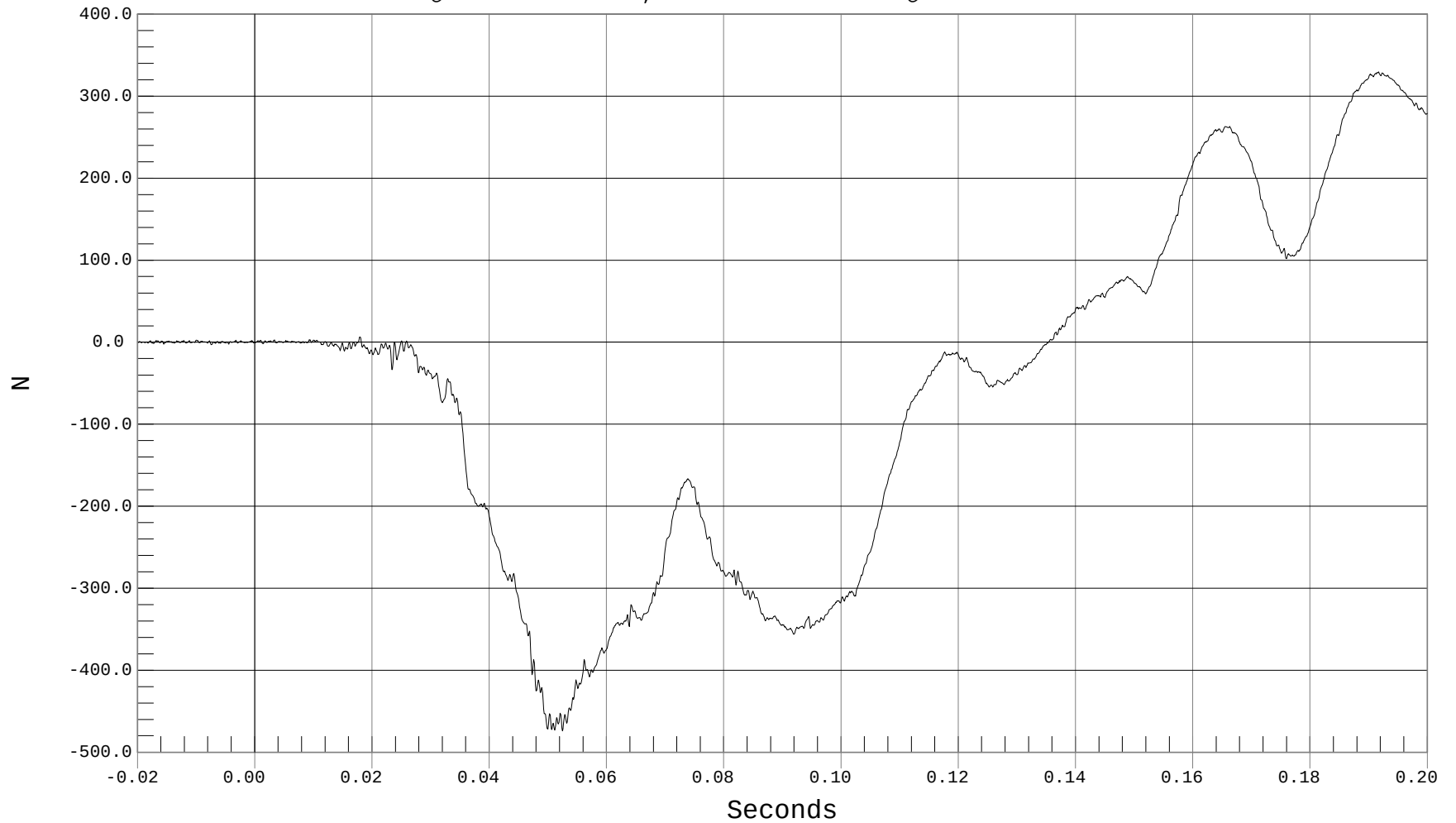
DRIVER UPPER NECK FORCE X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER UPPER NECK FORCE X, B01110FT.F04

Ymin = -473.97 N @ 0.0524 Seconds, Ymax = 329.76 N @ 0.1916 Seconds





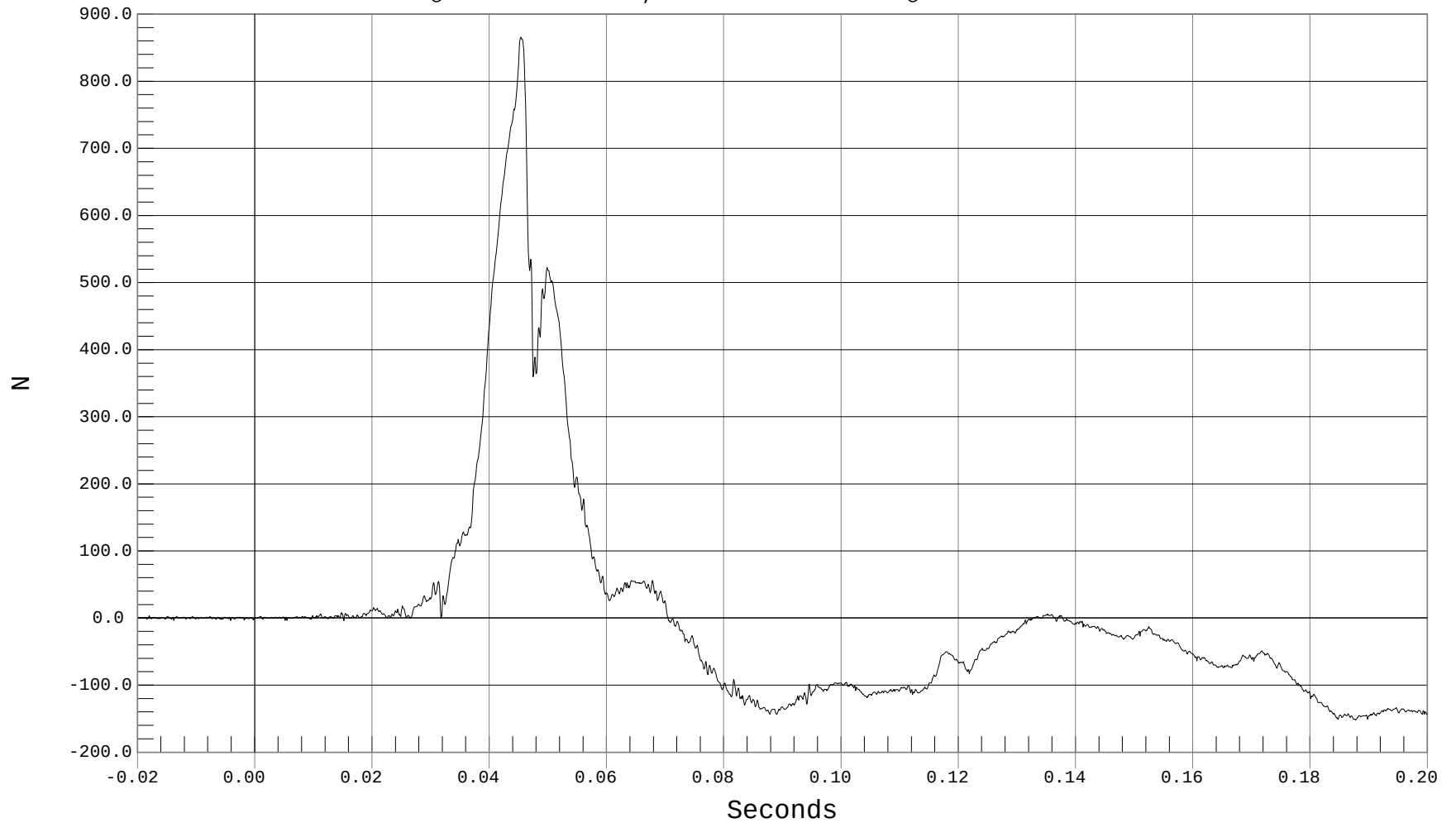
DRIVER UPPER NECK FORCE Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER UPPER NECK FORCE Y, B01110FT.F05

Ymin = -152.12 N @ 0.1877 Seconds, Ymax = 865.73 N @ 0.0453 Seconds





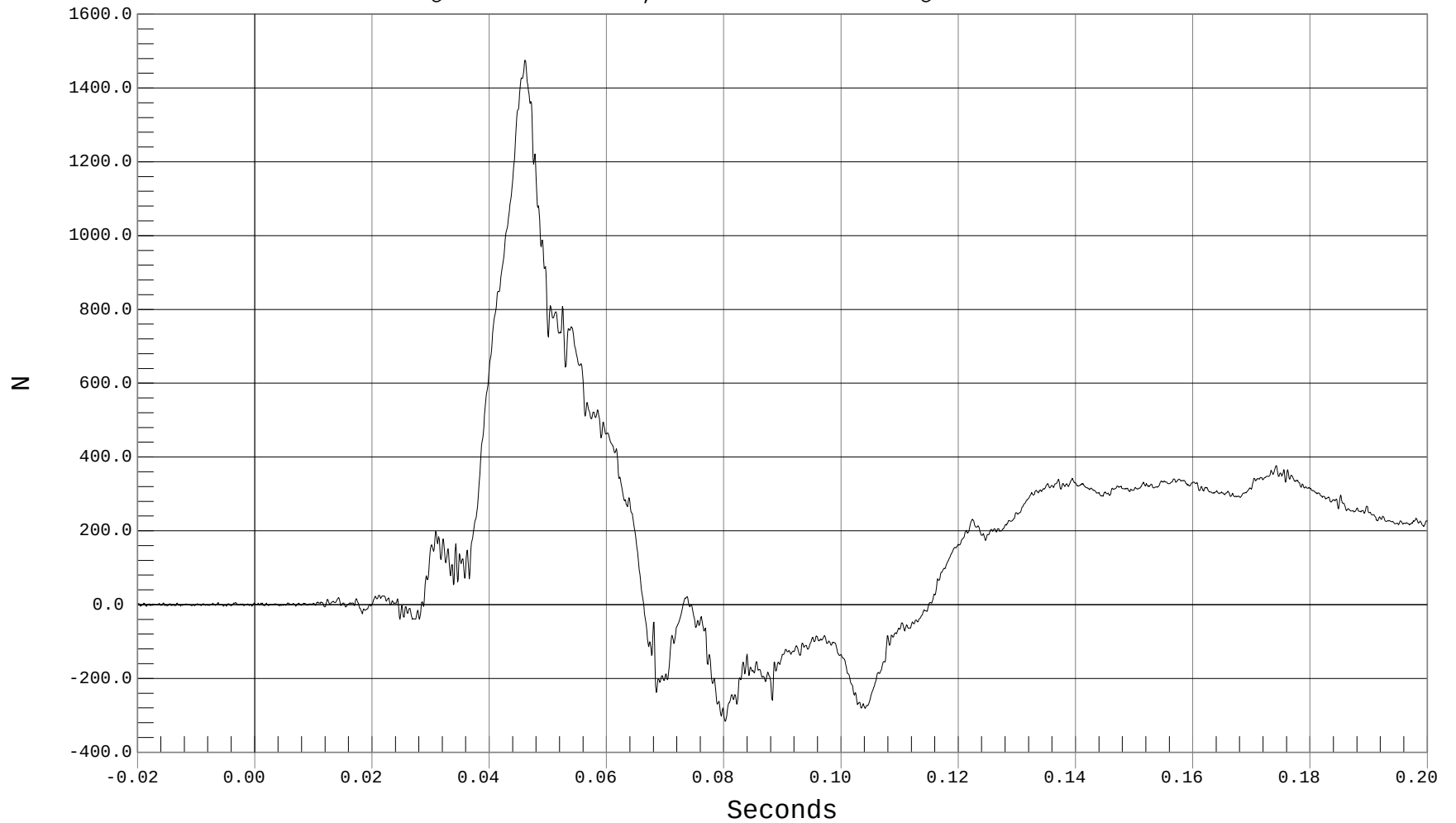
DRIVER UPPER NECK FORCE Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER UPPER NECK FORCE Z, B01110FT.F06

Ymin = -316.15 N @ 0.0802 Seconds, Ymax = 1474.98 N @ 0.0460 Seconds





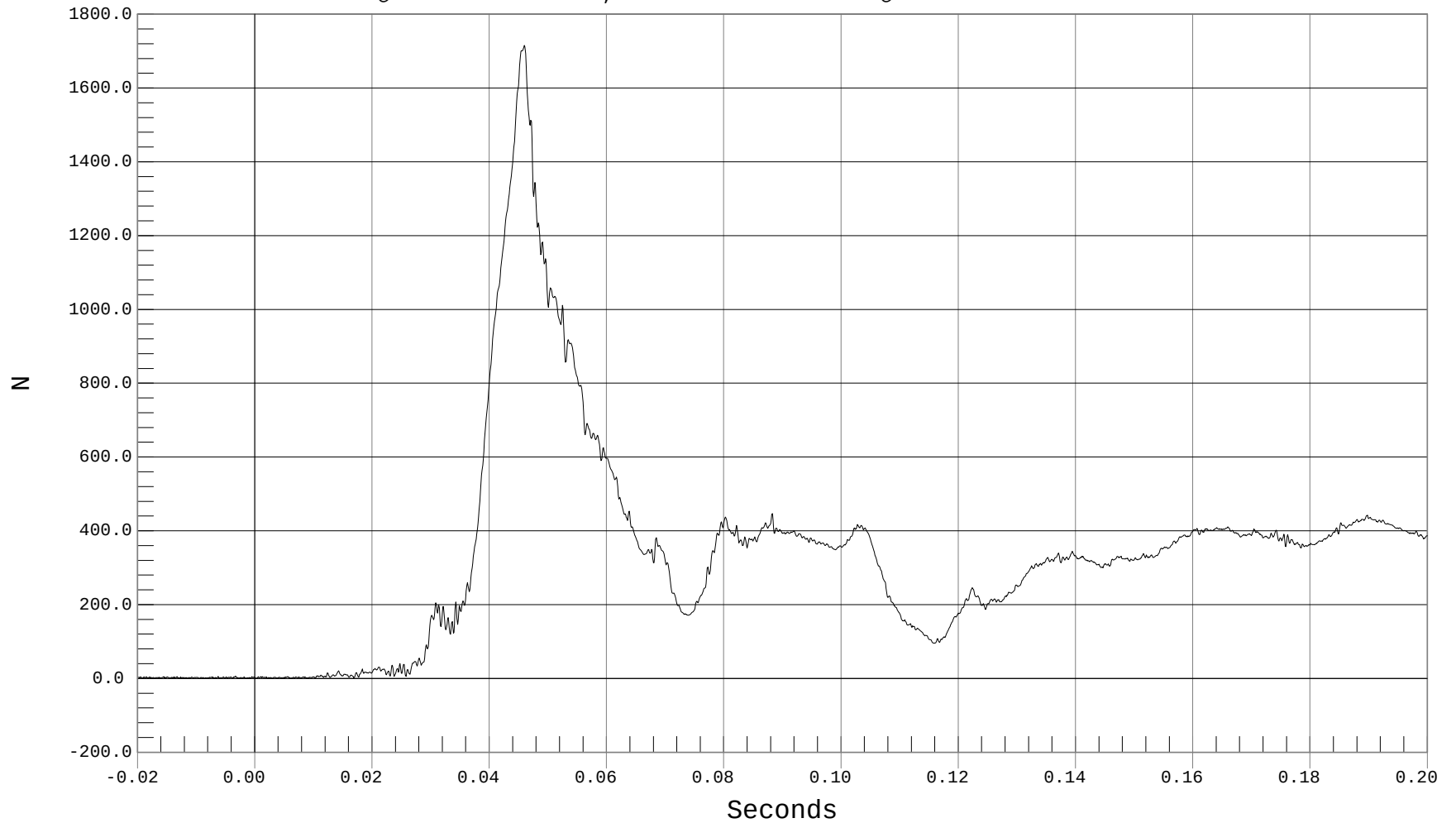
DRIVER UPPER NECK FORCE RESULTANT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER UPPER NECK FORCE RESULTANT, B01110FV.F04

Ymin = .5 N @ -0.0192 Seconds, Ymax = 1715.74 N @ 0.0459 Seconds





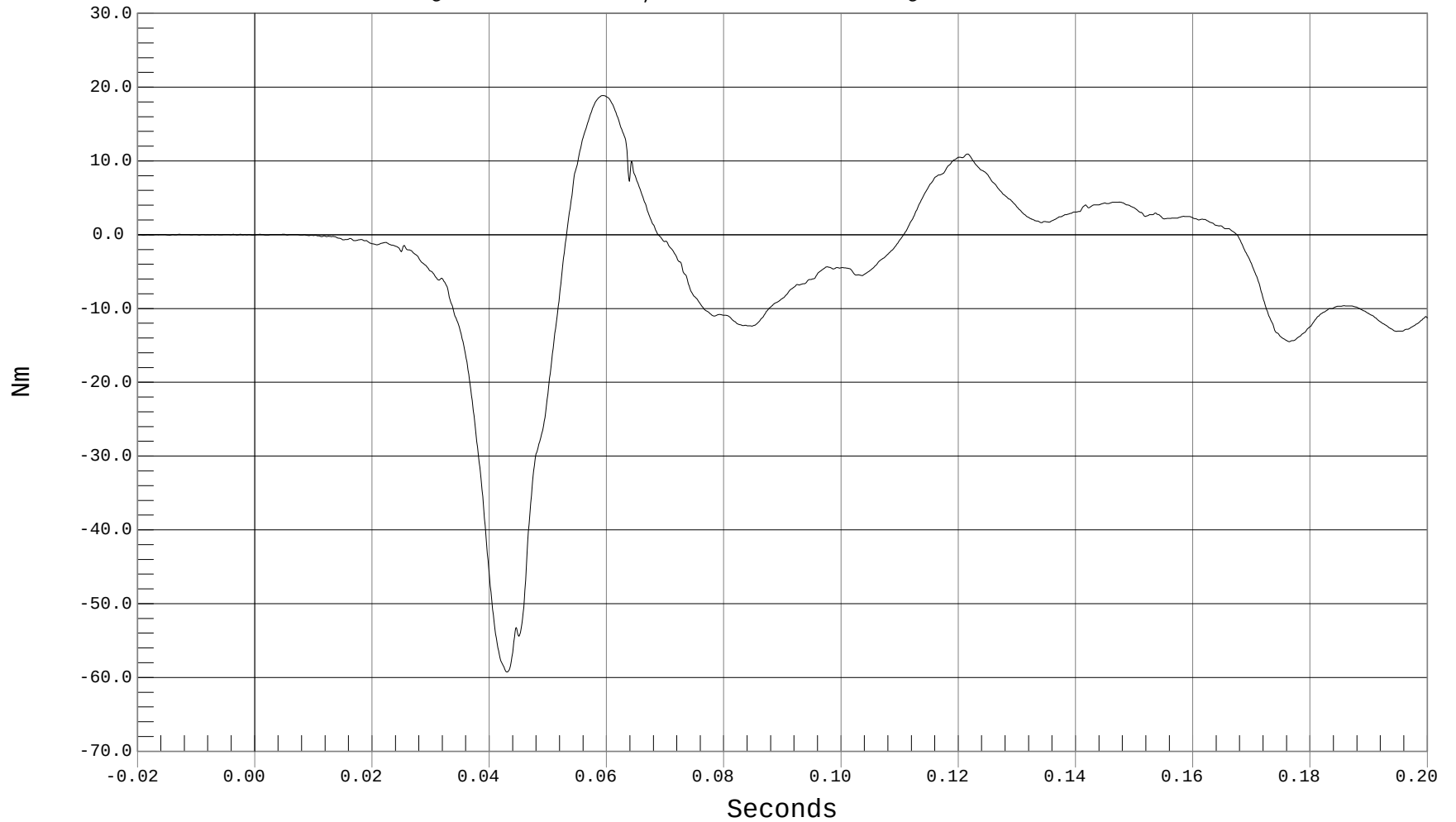
DRIVER UPPER NECK MOMENT X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER UPPER NECK MOMENT X, B01110MF.M07

Ymin = -59.26 Nm @ 0.0429 Seconds, Ymax = 18.85 Nm @ 0.0593 Seconds





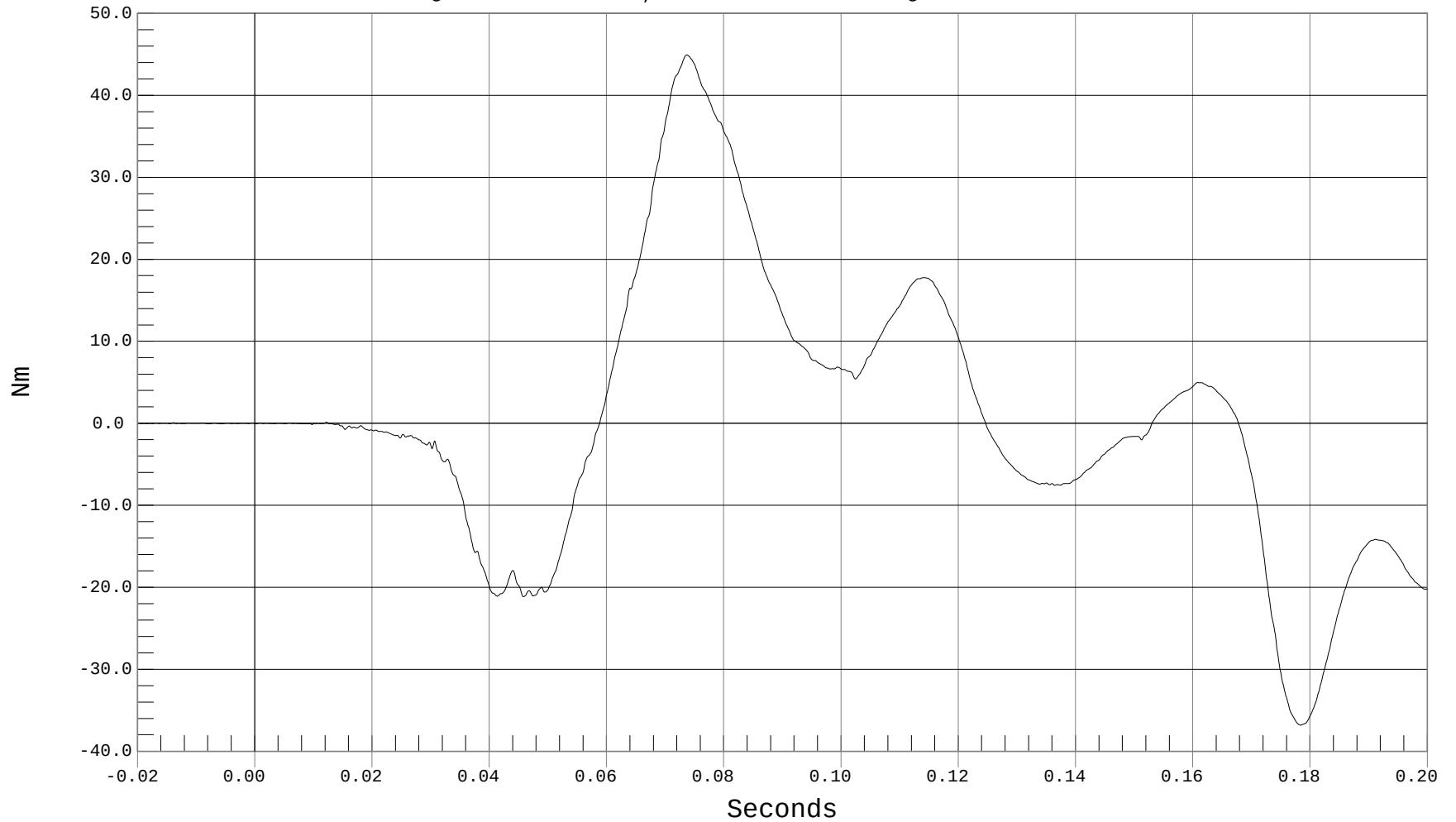
DRIVER UPPER NECK MOMENT Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER UPPER NECK MOMENT Y, B01110MF.M08

Ymin = -36.82 Nm @ 0.1783 Seconds, Ymax = 44.93 Nm @ 0.0736 Seconds





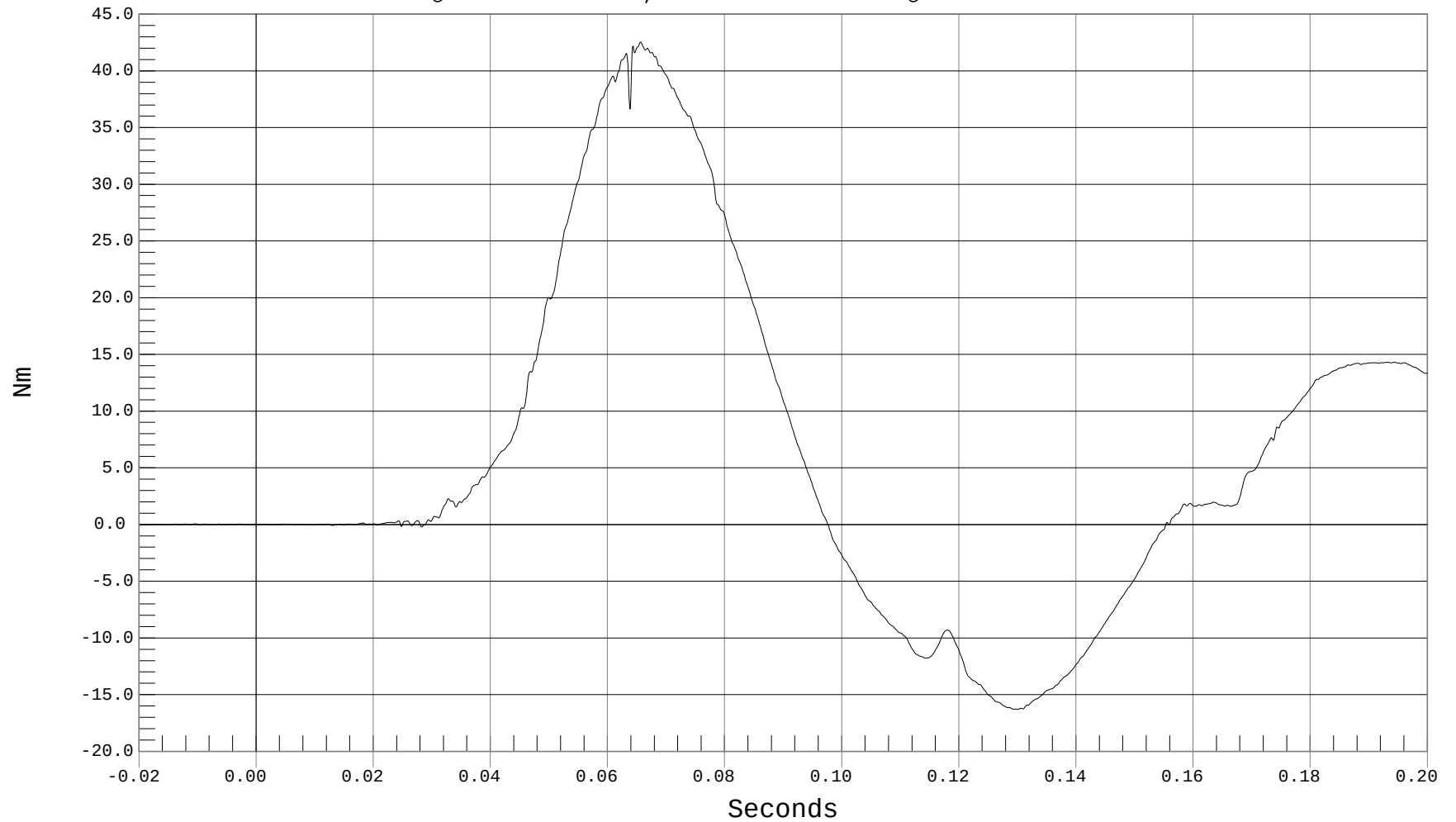
DRIVER UPPER NECK MOMENT Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER UPPER NECK MOMENT Z, B01110MF.M09

Ymin = -16.31 Nm @ 0.1298 Seconds, Ymax = 42.53 Nm @ 0.0656 Seconds





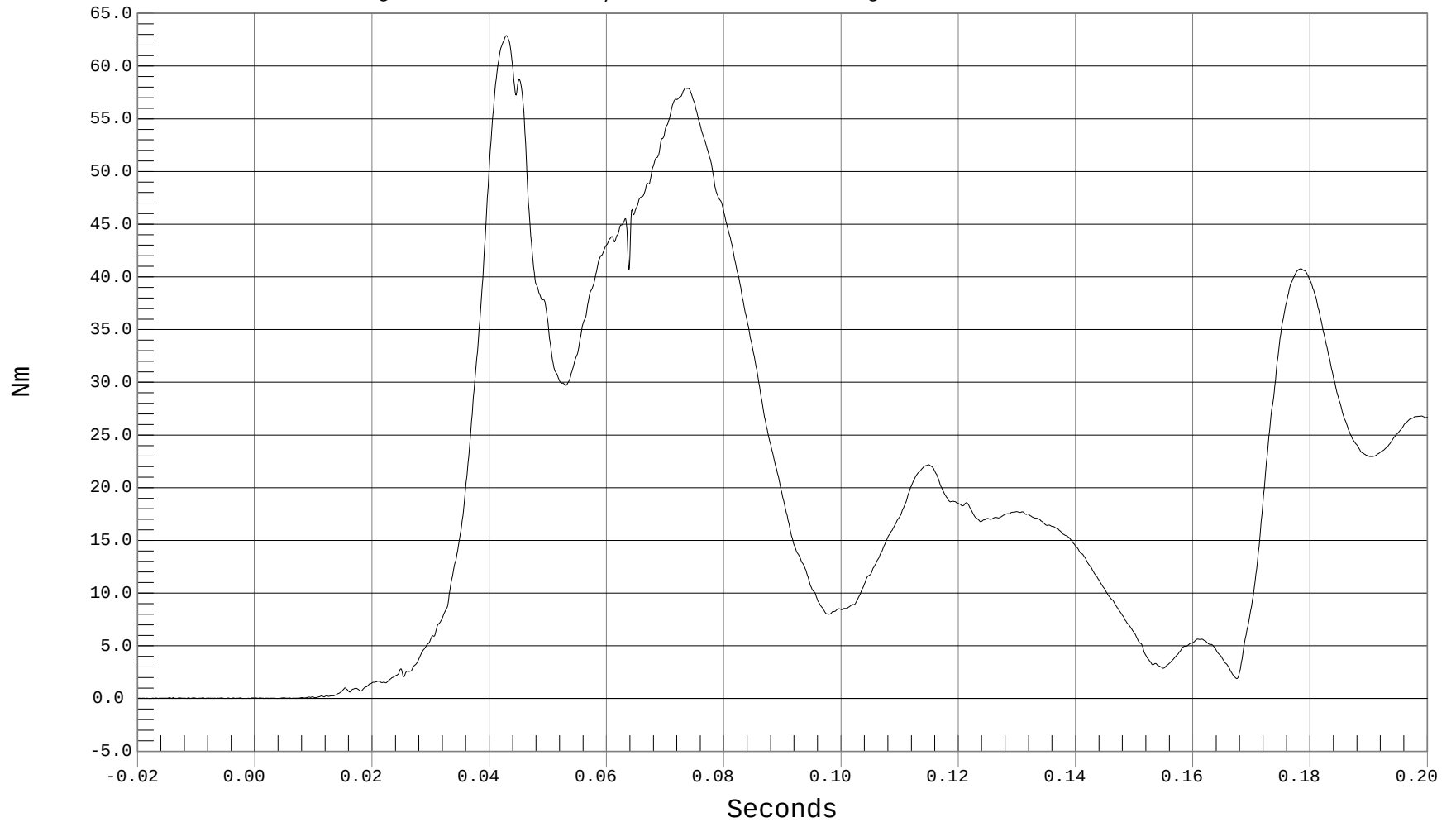
DRIVER UPPER NECK MOMENT RESULTANT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER UPPER NECK MOMENT RESULTANT, B01110MV.M07

Ymin = 0 Nm @ -0.0166 Seconds, Ymax = 62.89 Nm @ 0.0428 Seconds





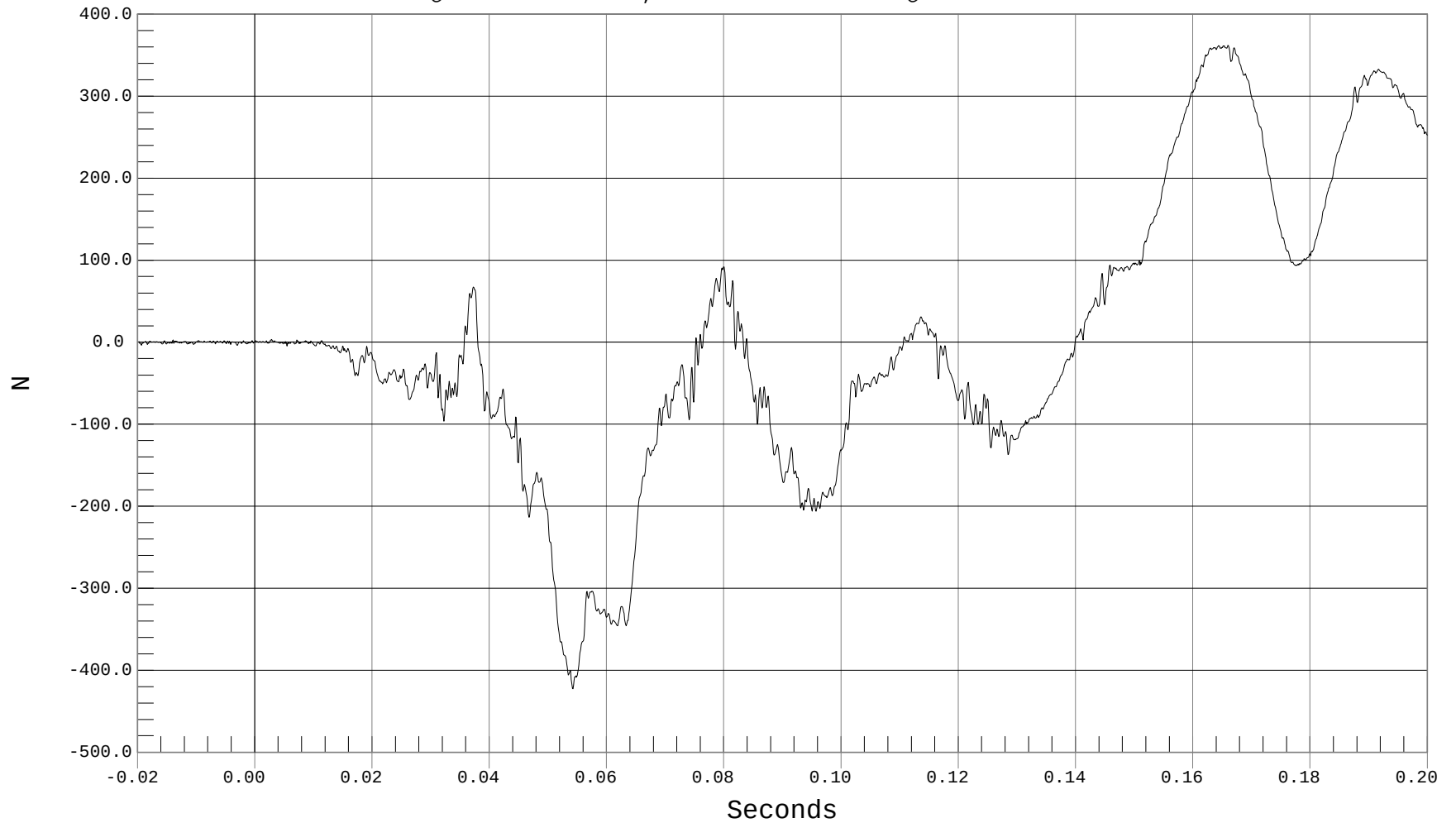
DRIVER LOWER NECK FORCE X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER LOWER NECK FORCE X, B01110FT.F10

Ymin = -422.76 N @ 0.0542 Seconds, Ymax = 362.02 N @ 0.1659 Seconds





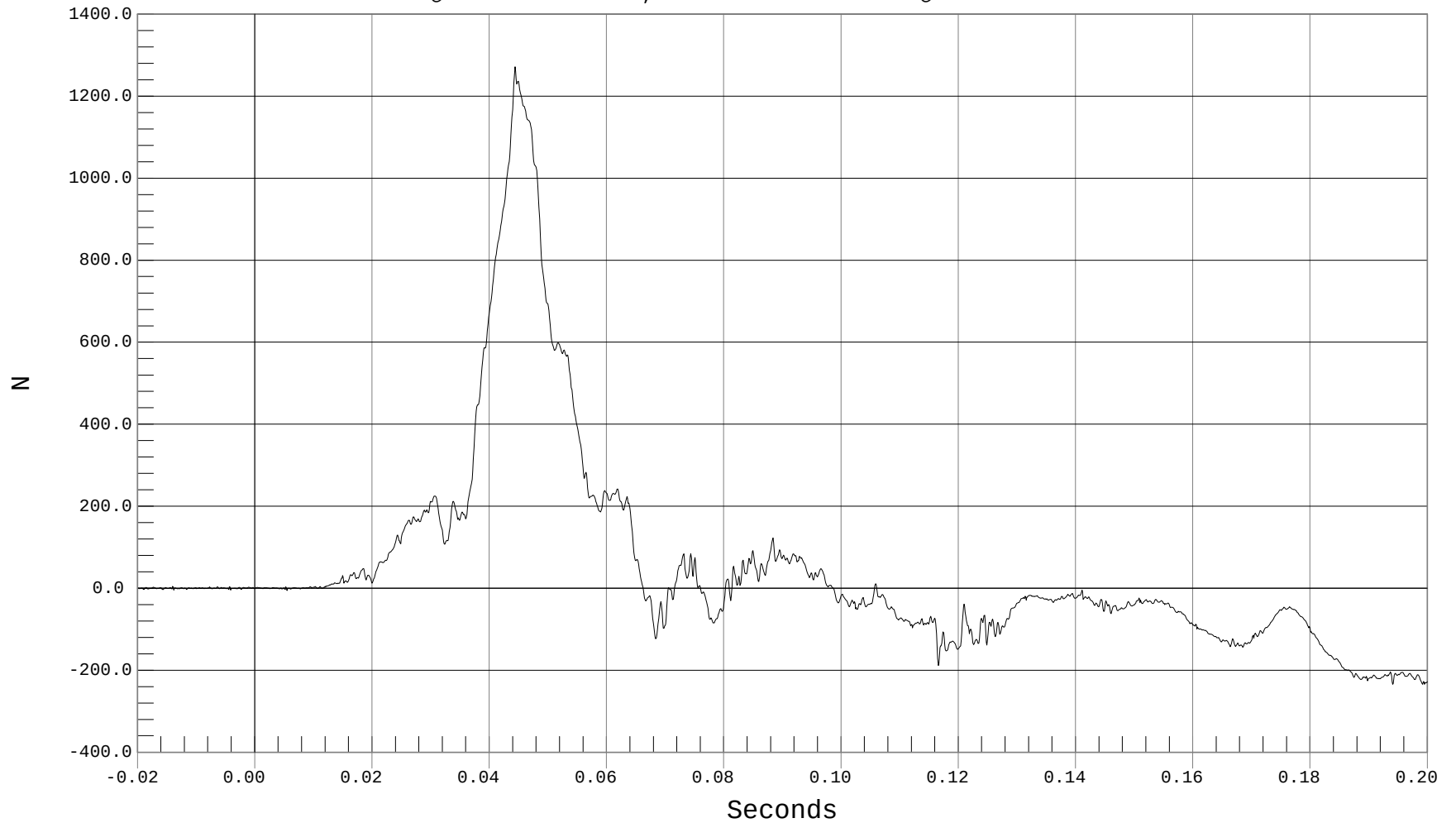
DRIVER LOWER NECK FORCE Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER LOWER NECK FORCE Y, B01110FT.F11

Ymin = -234.39 N @ 0.1940 Seconds, Ymax = 1271.67 N @ 0.0443 Seconds





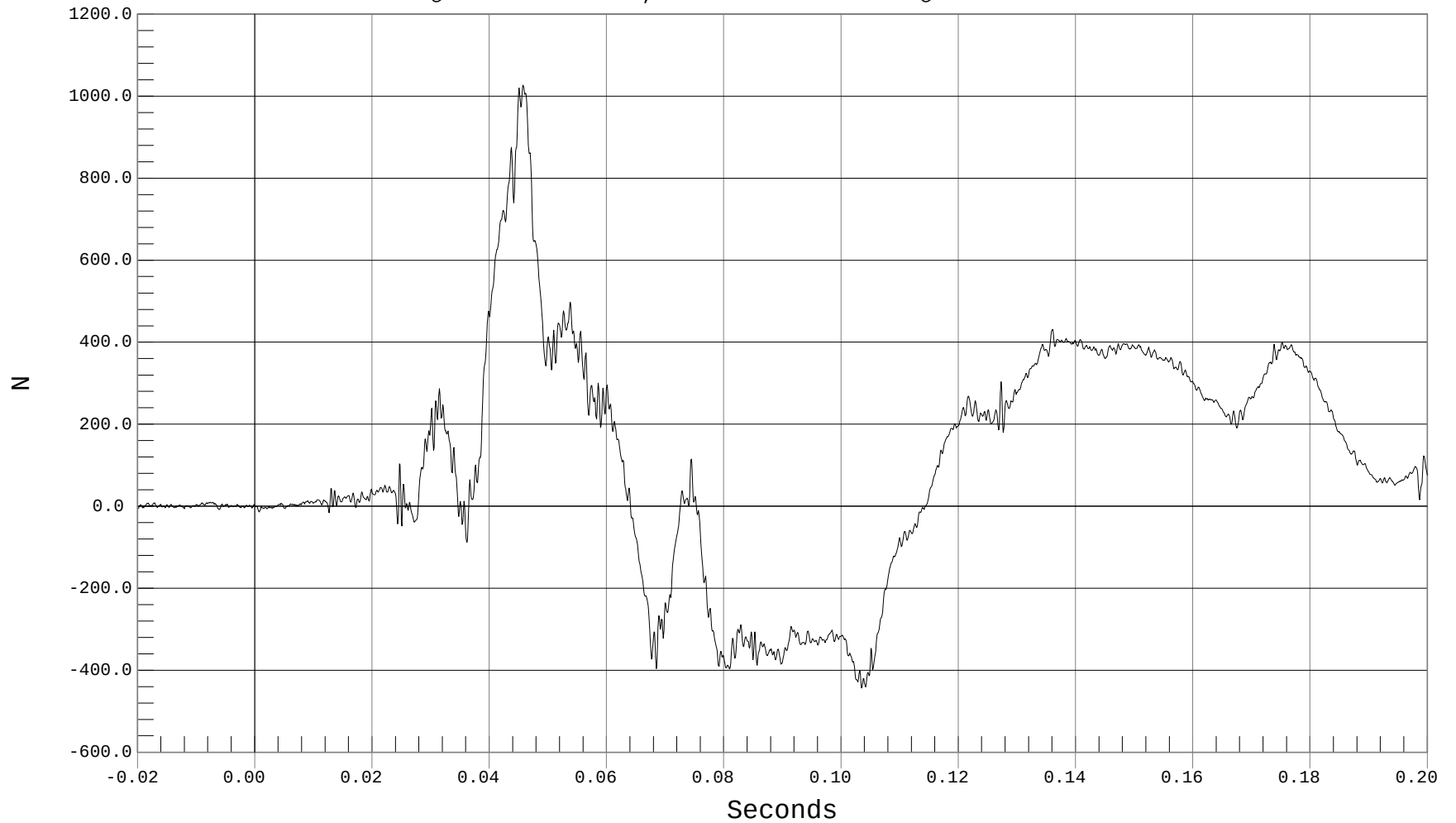
DRIVER LOWER NECK FORCE Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER LOWER NECK FORCE Z, B01110FT.F12

Ymin = -443.77 N @ 0.1034 Seconds, Ymax = 1027.35 N @ 0.0457 Seconds





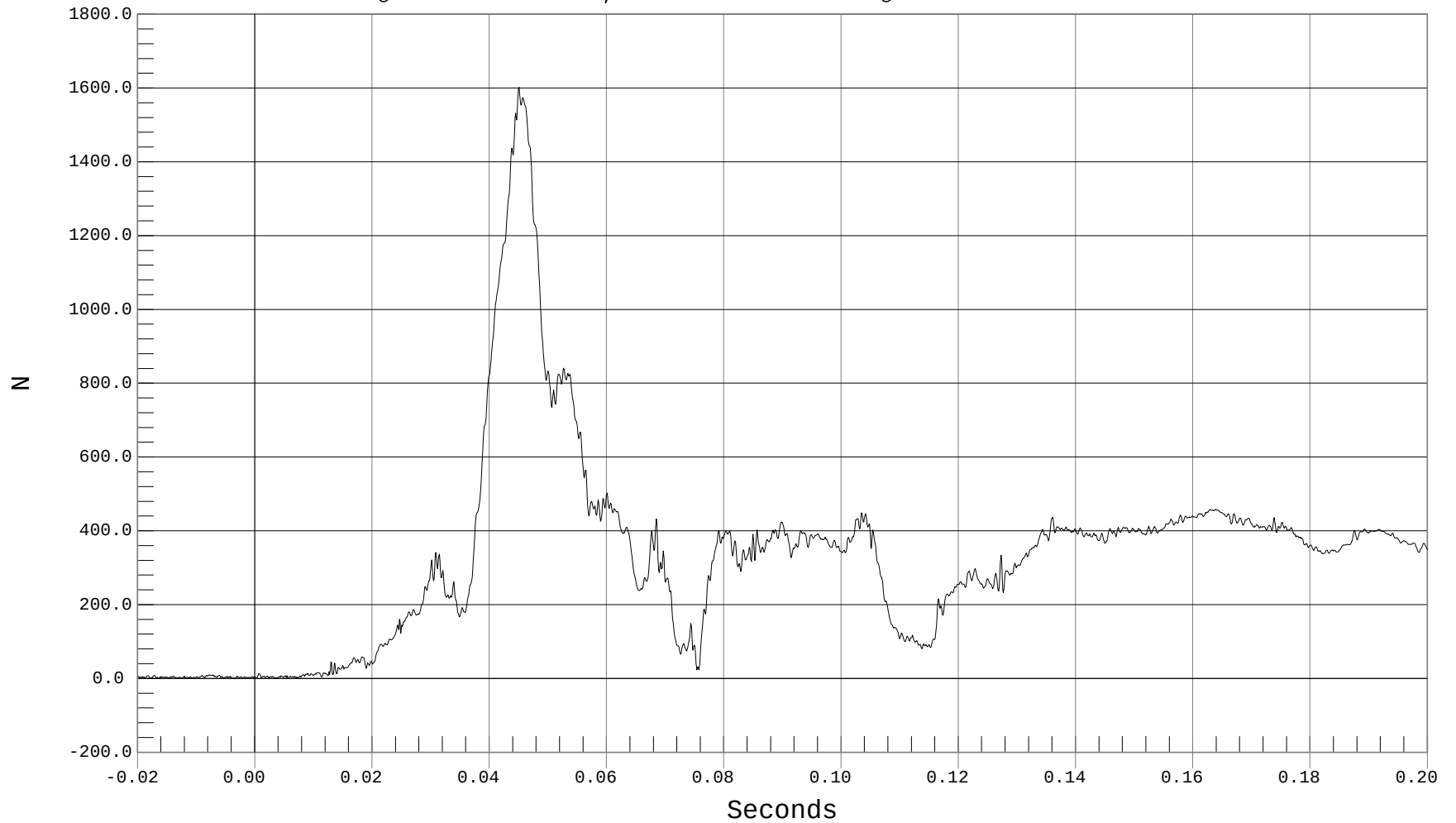
DRIVER LOWER NECK FORCE RESULTANT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER LOWER NECK FORCE RESULTANT, B01110FV.F10

Ymin = .4 N @ -0.0166 Seconds, Ymax = 1602.32 N @ 0.0450 Seconds





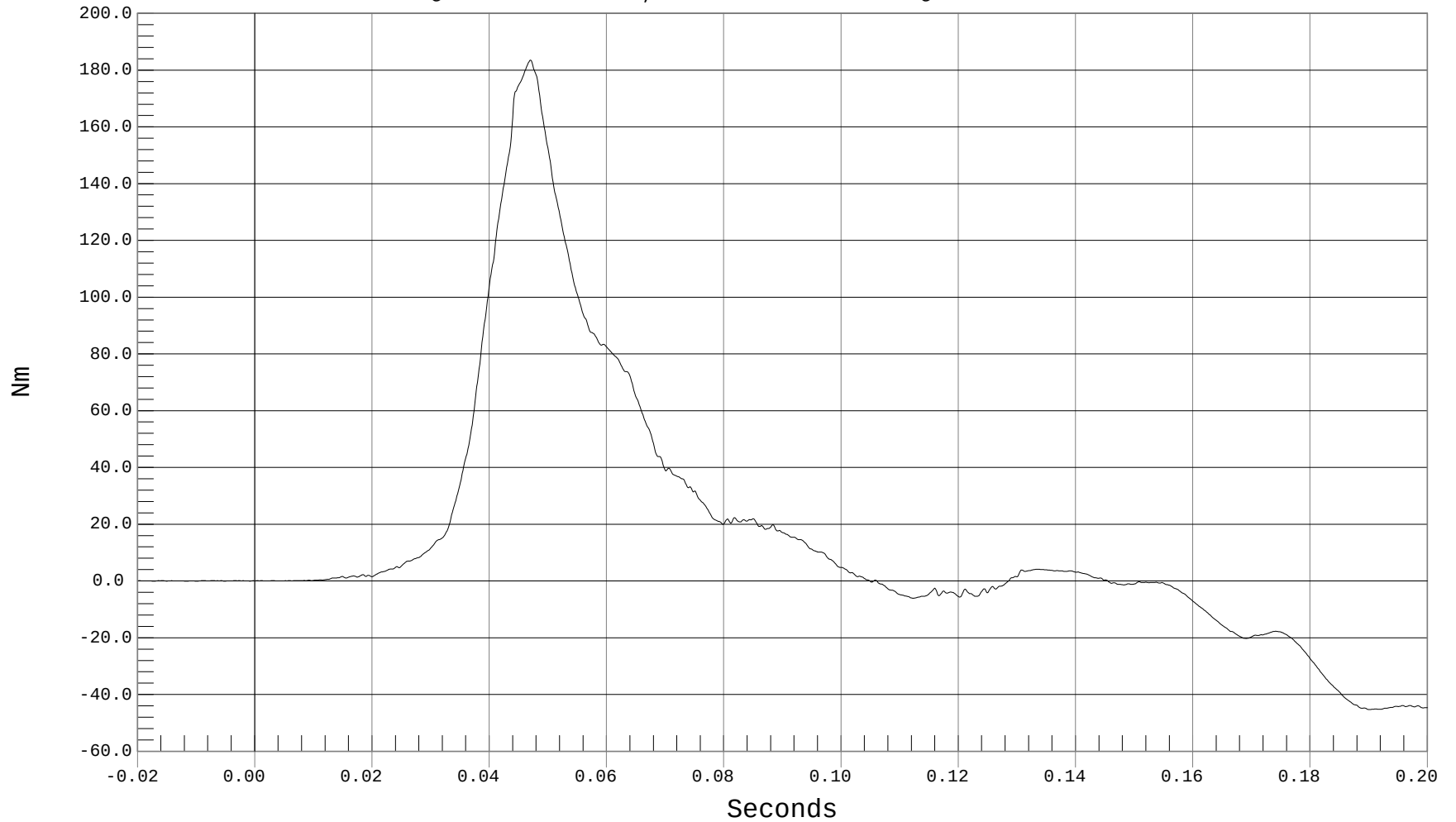
DRIVER LOWER NECK MOMENT X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER LOWER NECK MOMENT X, B01110MF.M13

Ymin = -45.34 Nm @ 0.1899 Seconds, Ymax = 183.51 Nm @ 0.0469 Seconds





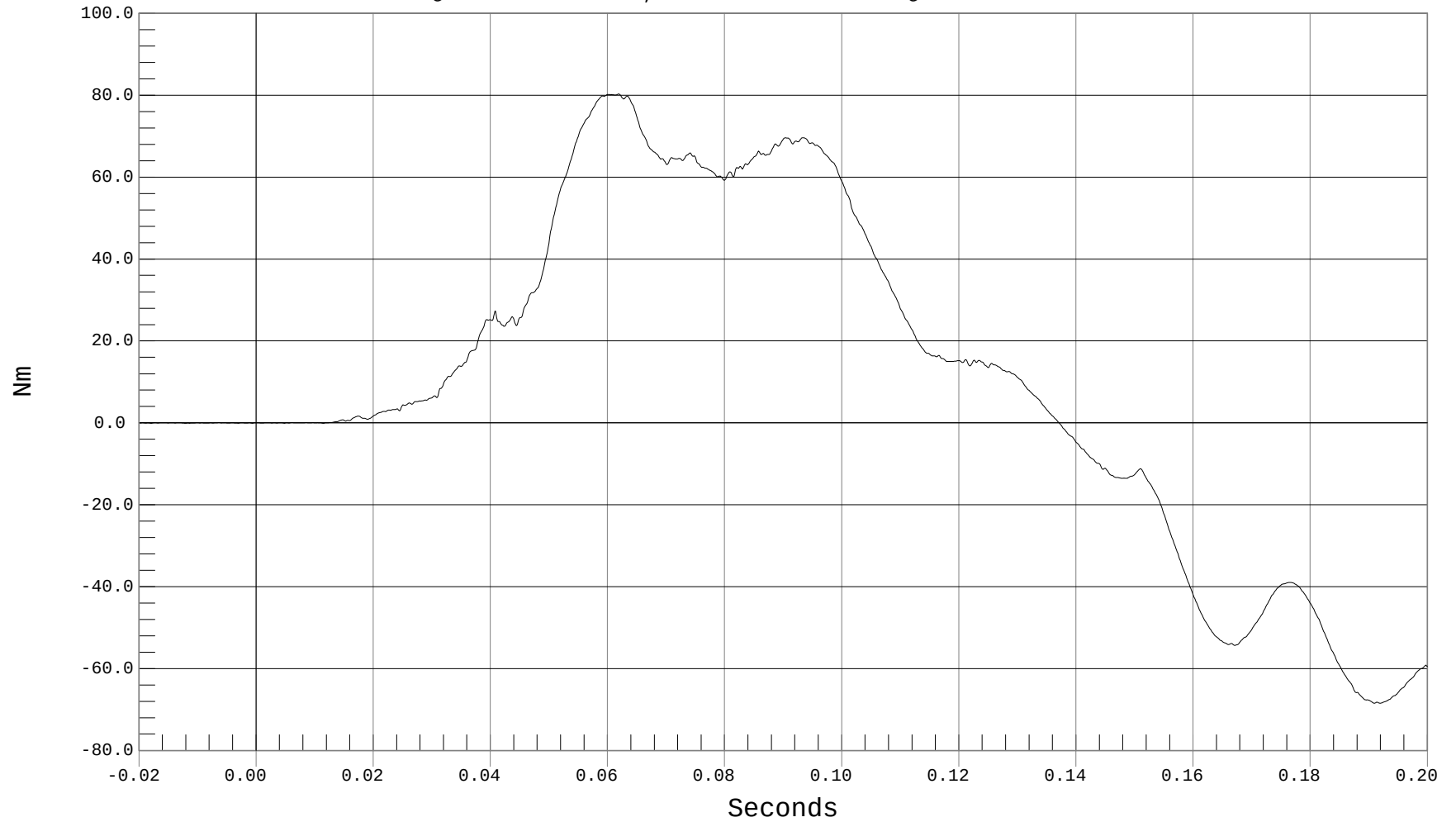
DRIVER LOWER NECK MOMENT Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER LOWER NECK MOMENT Y, B01110MF.M14

Ymin = -68.46 Nm @ 0.1908 Seconds, Ymax = 80.31 Nm @ 0.0618 Seconds





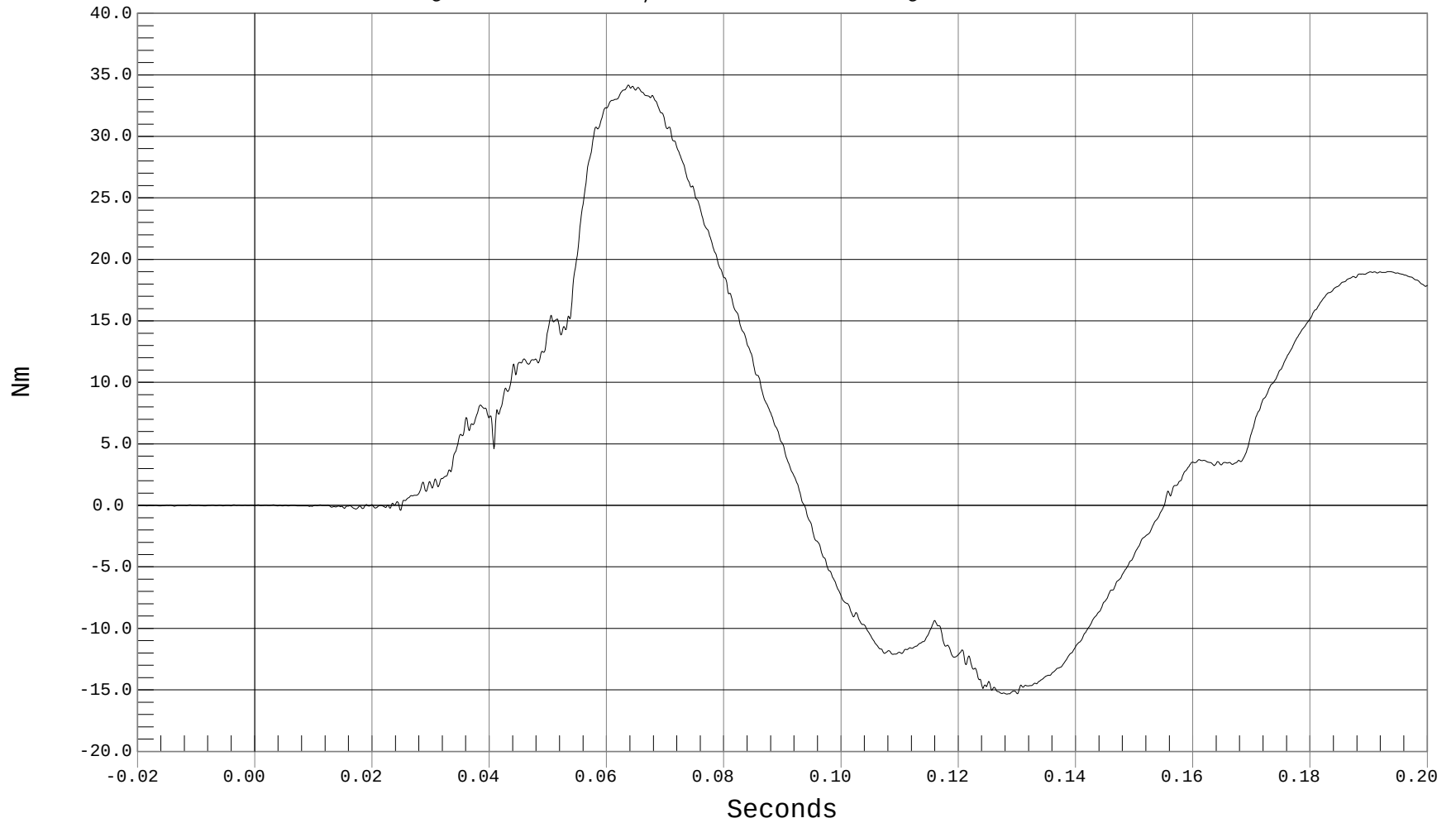
DRIVER LOWER NECK MOMENT Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER LOWER NECK MOMENT Z, B01110MF.M15

Ymin = -15.34 Nm @ 0.1282 Seconds, Ymax = 34.17 Nm @ 0.0636 Seconds





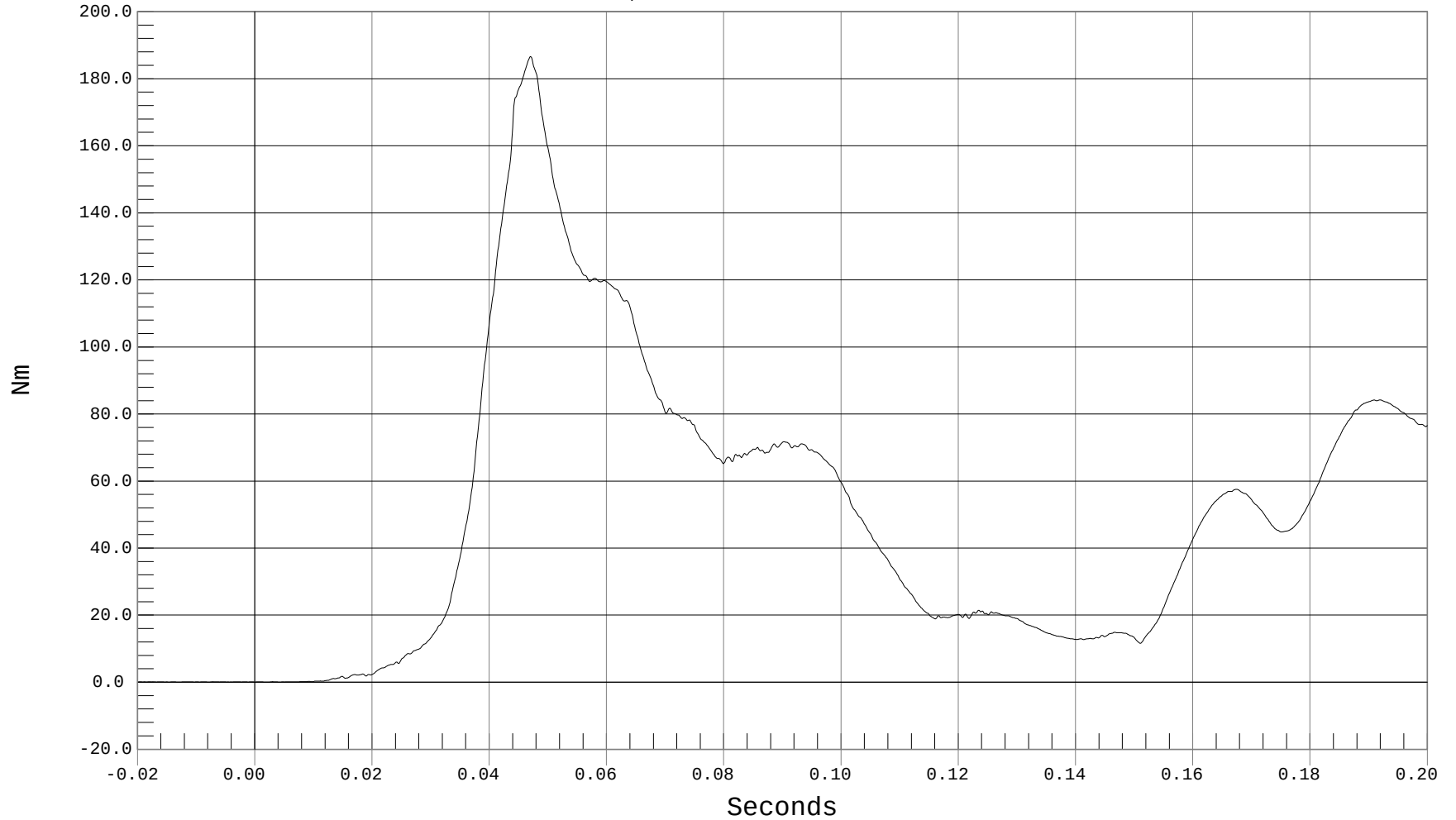
DRIVER LOWER NECK MOMENT RESULTANT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER LOWER NECK MOMENT RESULTANT, B01110MV.M13

Ymin = .01 Nm @ -0.0012 Seconds, Ymax = 186.6 Nm @ 0.0470 Seconds





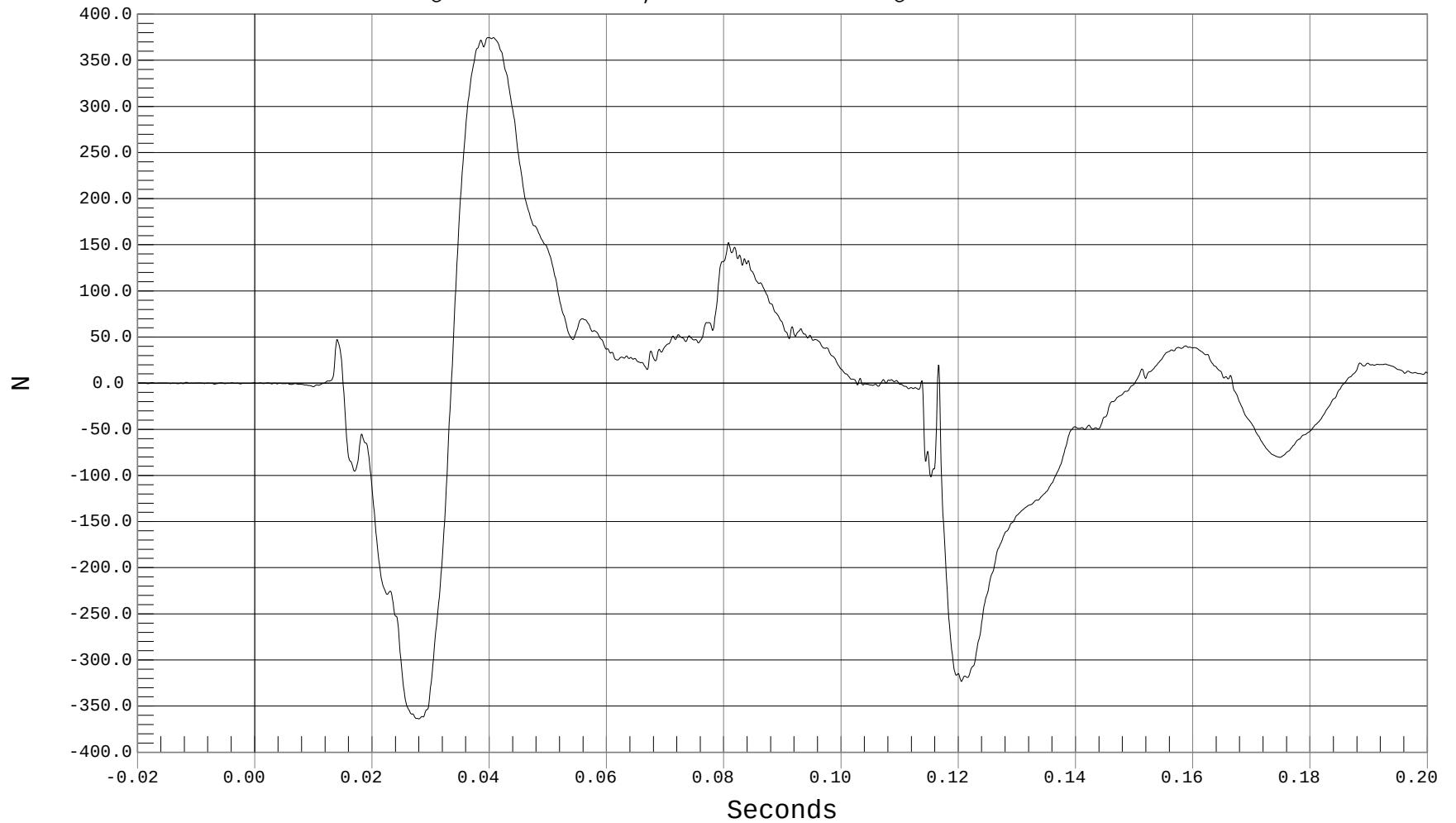
DRIVER SHOULDER FORCE X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER SHOULDER FORCE X, B01110FF.F16

Ymin = -363.91 N @ 0.0279 Seconds, Ymax = 374.7 N @ 0.0399 Seconds





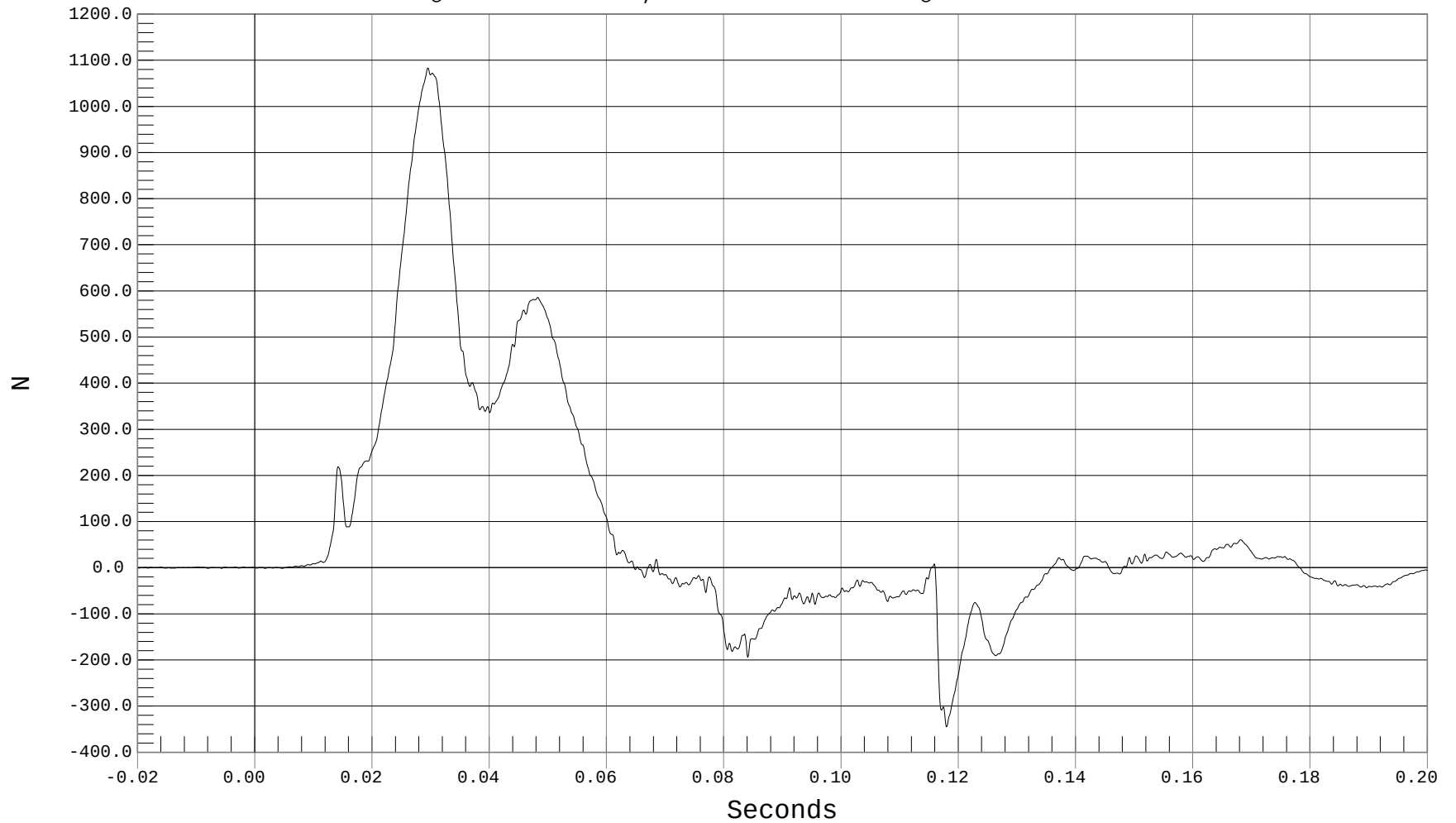
DRIVER SHOULDER FORCE Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER SHOULDER FORCE Y, B01110FF.F17

Ymin = -345.14 N @ 0.1179 Seconds, Ymax = 1083.26 N @ 0.0294 Seconds





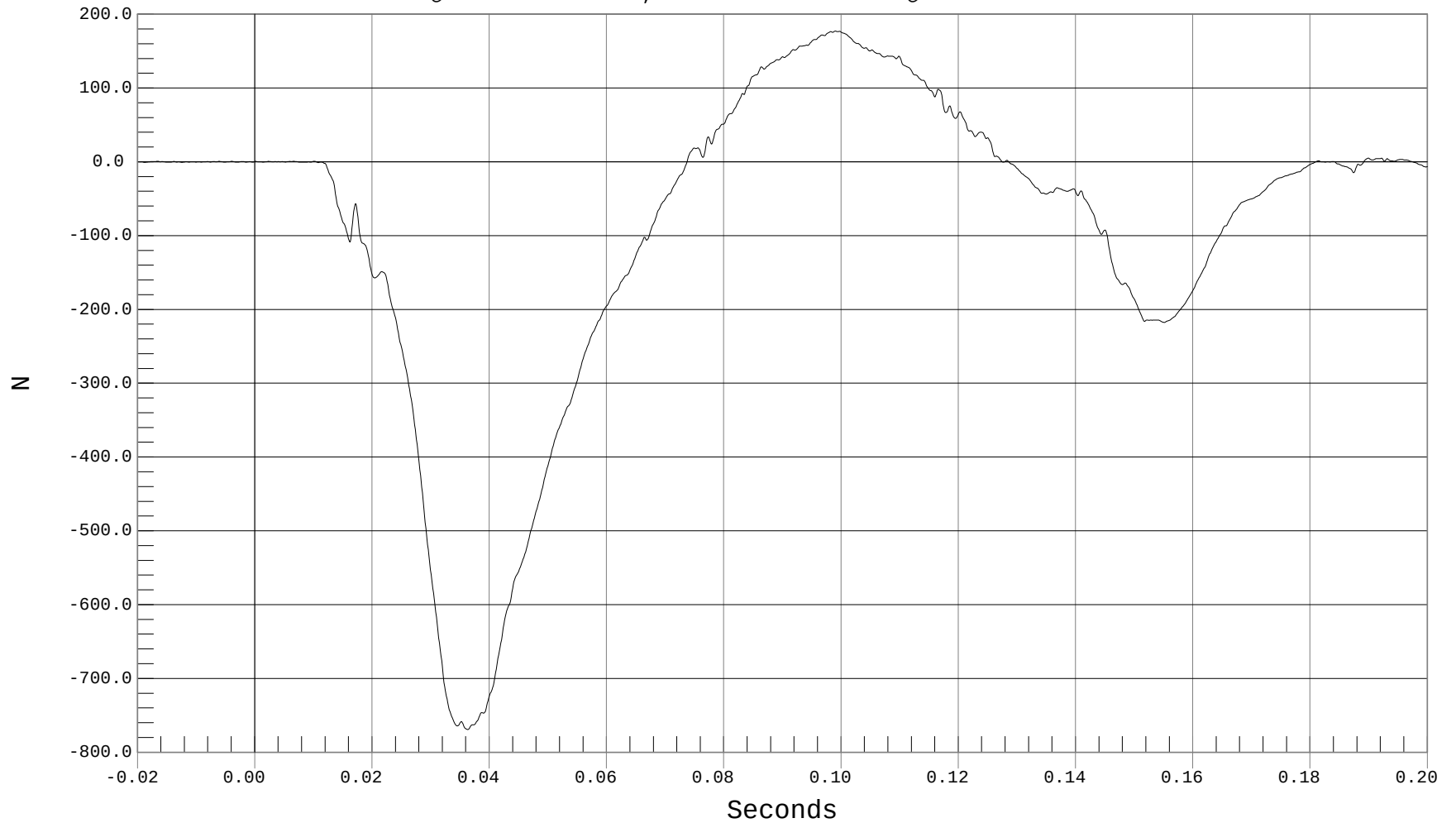
DRIVER SHOULDER FORCE Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER SHOULDER FORCE Z, B01110FF.F18

Ymin = -769.28 N @ 0.0362 Seconds, Ymax = 177.11 N @ 0.0989 Seconds





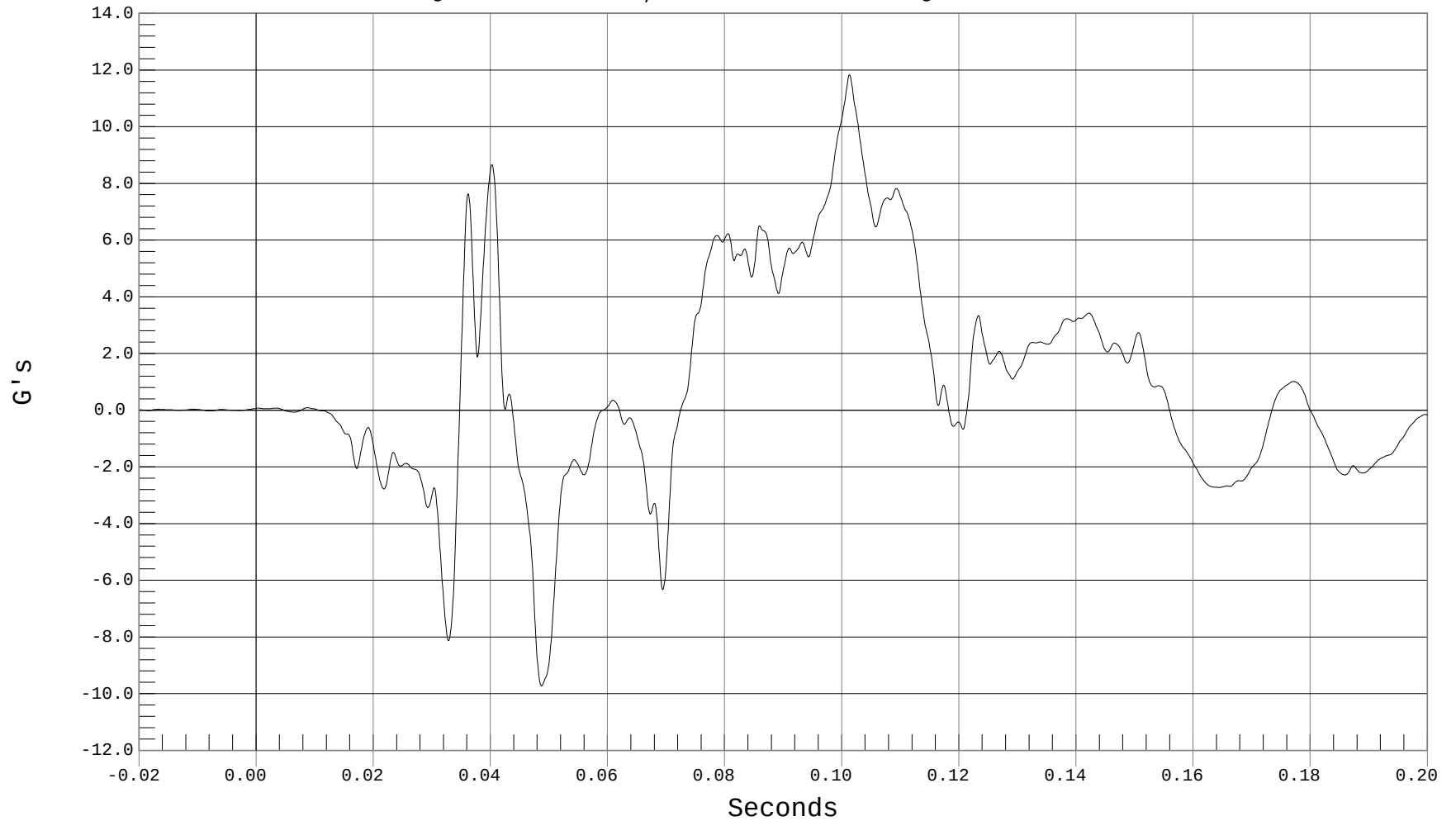
DRIVER UPPER SPINE X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 DRIVER UPPER SPINE X, B01110AF.A20

Ymin = -9.73 G's @ 0.0487 Seconds, Ymax = 11.83 G's @ 0.1012 Seconds





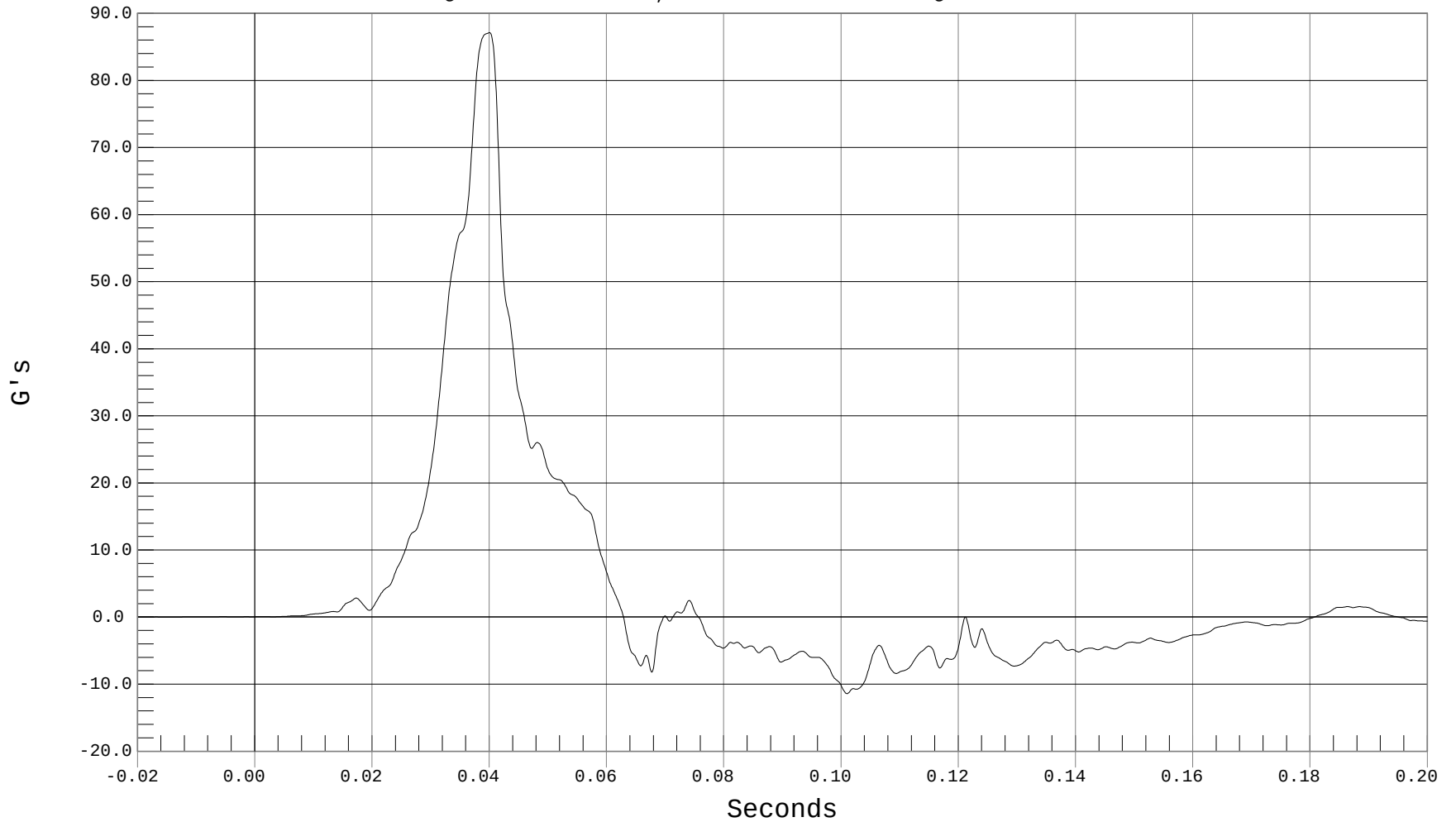
DRIVER UPPER SPINE Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 DRIVER UPPER SPINE Y, B01110AF.A21

Ymin = -11.42 G's @ 0.1009 Seconds, Ymax = 87.13 G's @ 0.0400 Seconds





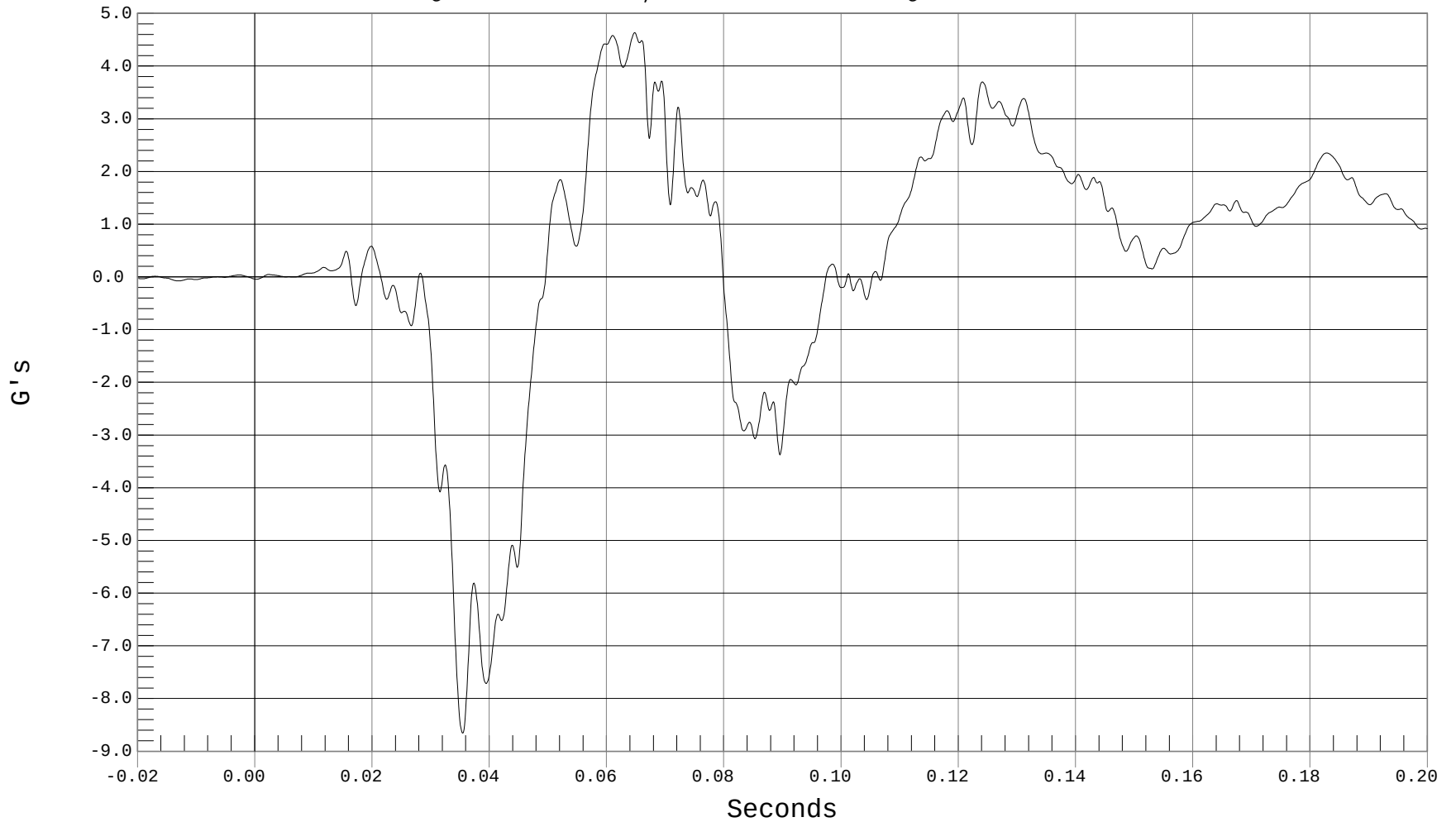
DRIVER UPPER SPINE Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 DRIVER UPPER SPINE Z, B01110AF.A22

Ymin = -8.65 G's @ 0.0354 Seconds, Ymax = 4.63 G's @ 0.0647 Seconds





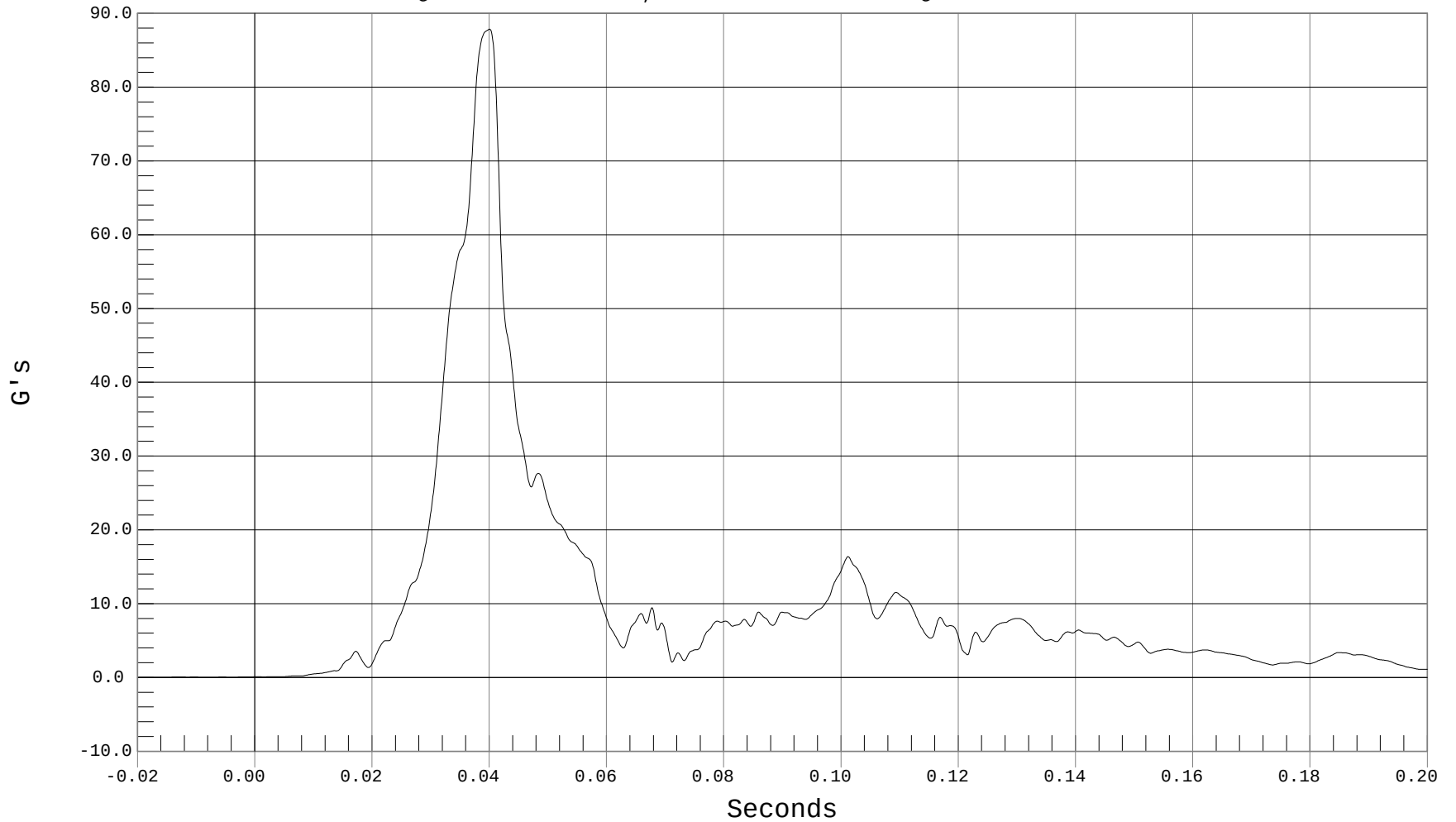
DRIVER UPPER SPINE RESULTANT ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 DRIVER UPPER SPINE RESULTANT, B01110AV.A20

Ymin = .01 G's @ -0.0180 Seconds, Ymax = 87.87 G's @ 0.0400 Seconds





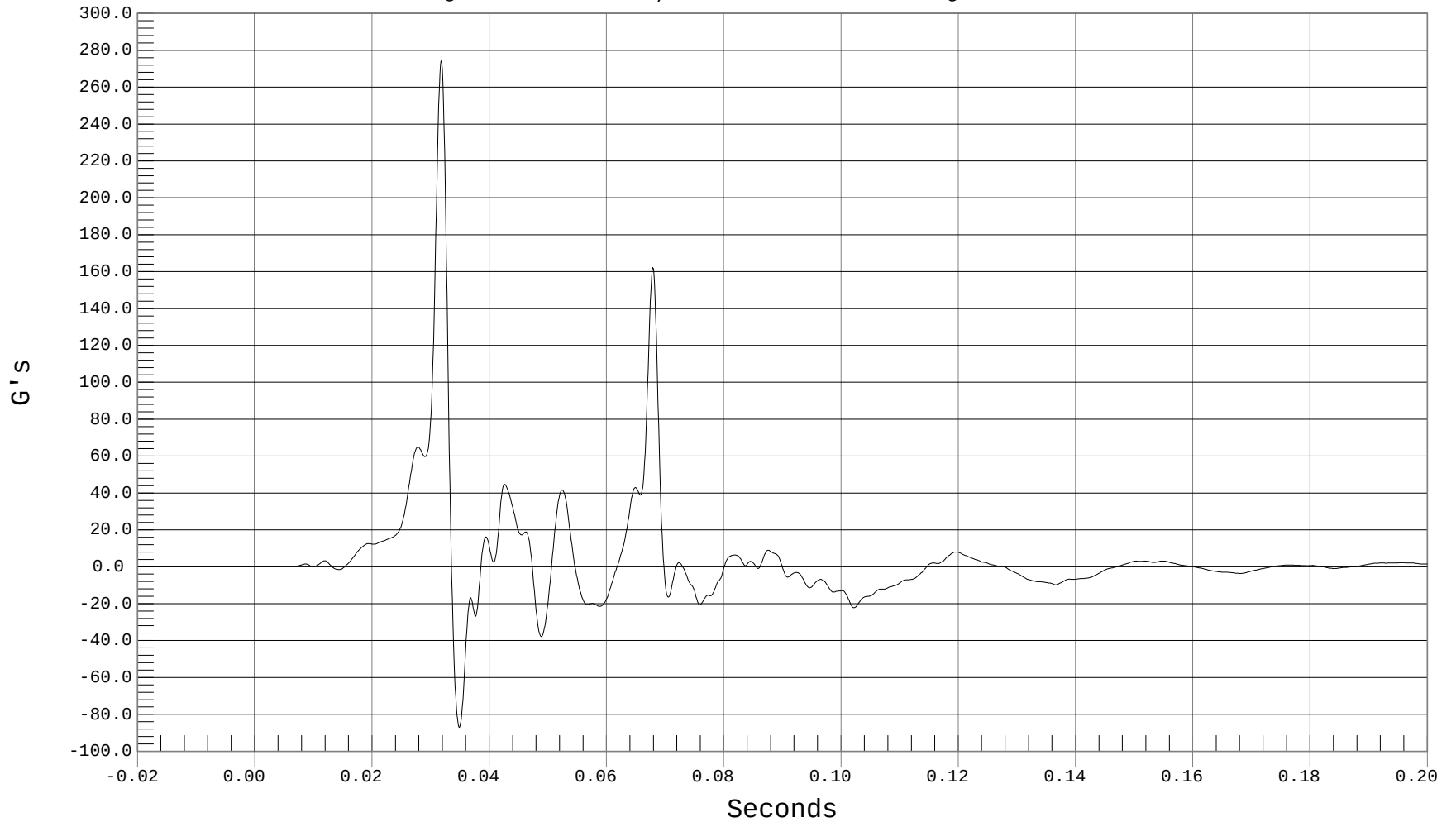
DRIVER UPPER RIB Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 DRIVER UPPER RIB Y, B01110AF.A23

Ymin = -87.21 G's @ 0.0348 Seconds, Ymax = 274.16 G's @ 0.0317 Seconds





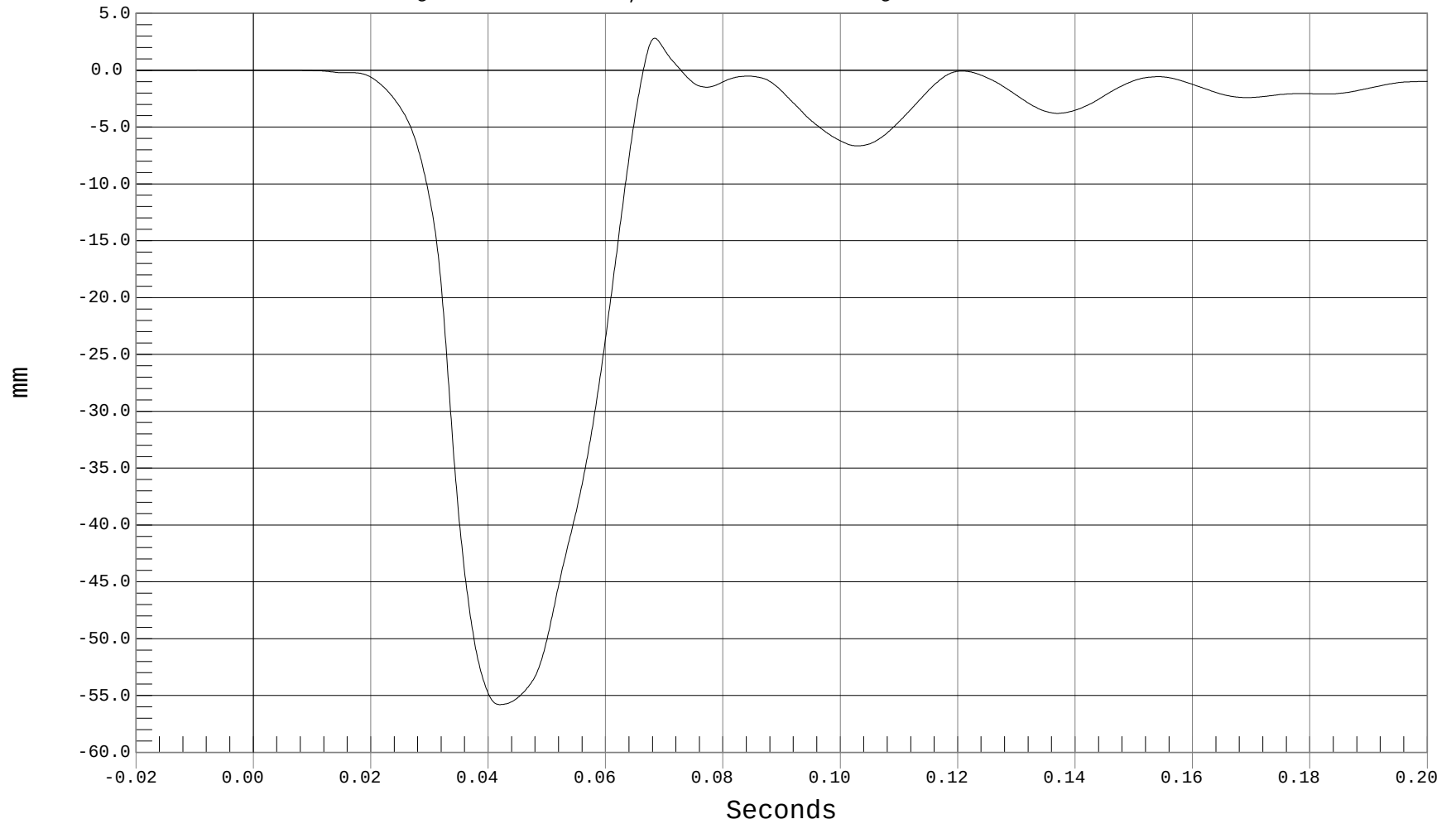
DRIVER UPPER RIB DISPLACEMENT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 DRIVER UPPER RIB DISPLACEMENT, B01110DF.D26

Ymin = -55.8 mm @ 0.0419 Seconds, Ymax = 2.82 mm @ 0.0683 Seconds





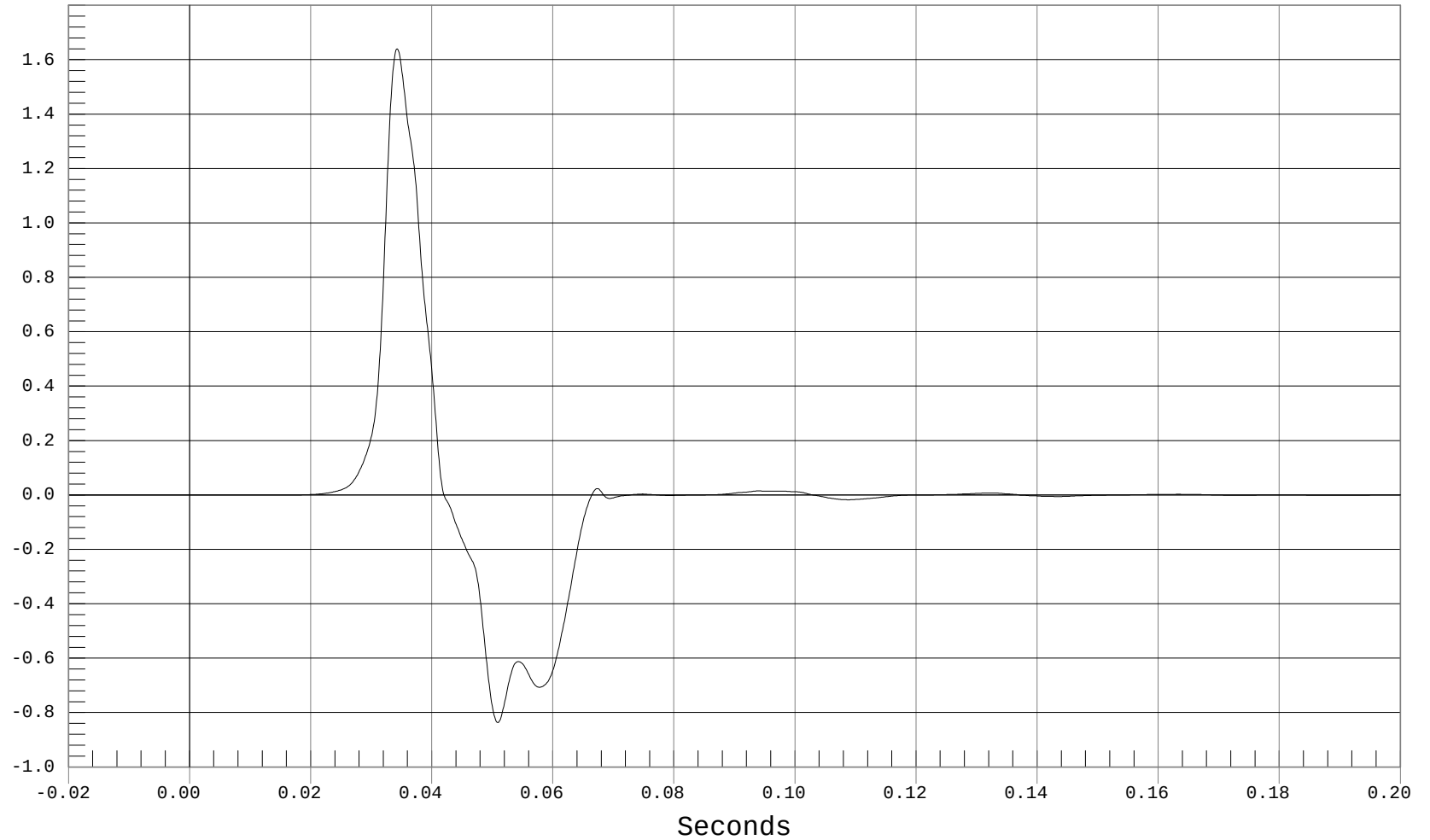
DRIVER UPPER RIB VISCOUS CRITERIA

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 Viscous Criterion, B01110DV.C26

Ymin = -.84 @ 0.0508 Seconds, Ymax = 1.64 @ 0.0342 Seconds





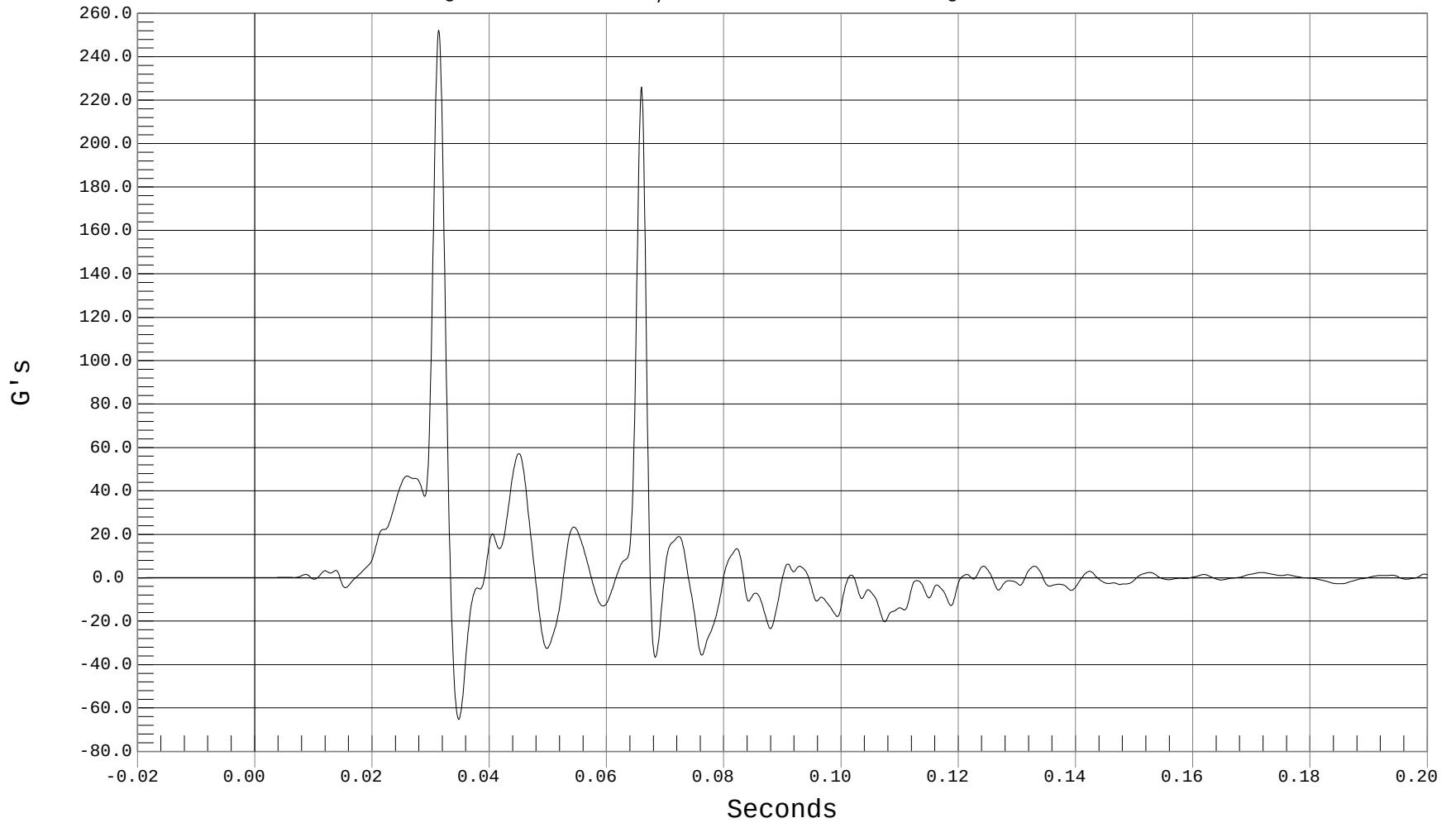
DRIVER MID RIB Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 DRIVER MID RIB Y, B01110AF.A24

Ymin = -65.31 G's @ 0.0347 Seconds, Ymax = 252.24 G's @ 0.0313 Seconds





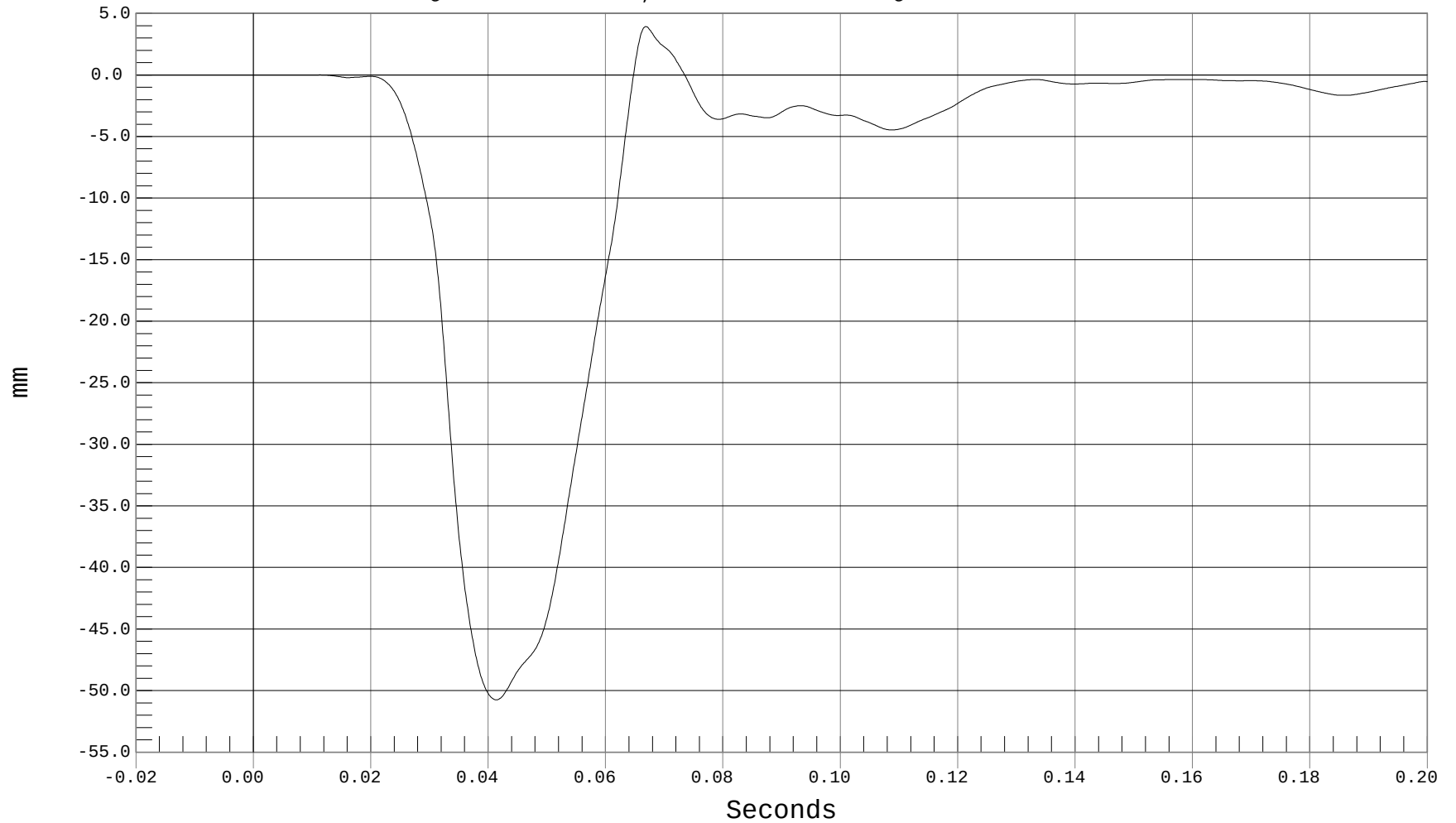
DRIVER MID RIB DISPLACEMENT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 DRIVER MID RIB DISPLACEMENT, B01110DF.D27

Ymin = -50.75 mm @ 0.0413 Seconds, Ymax = 3.93 mm @ 0.0668 Seconds





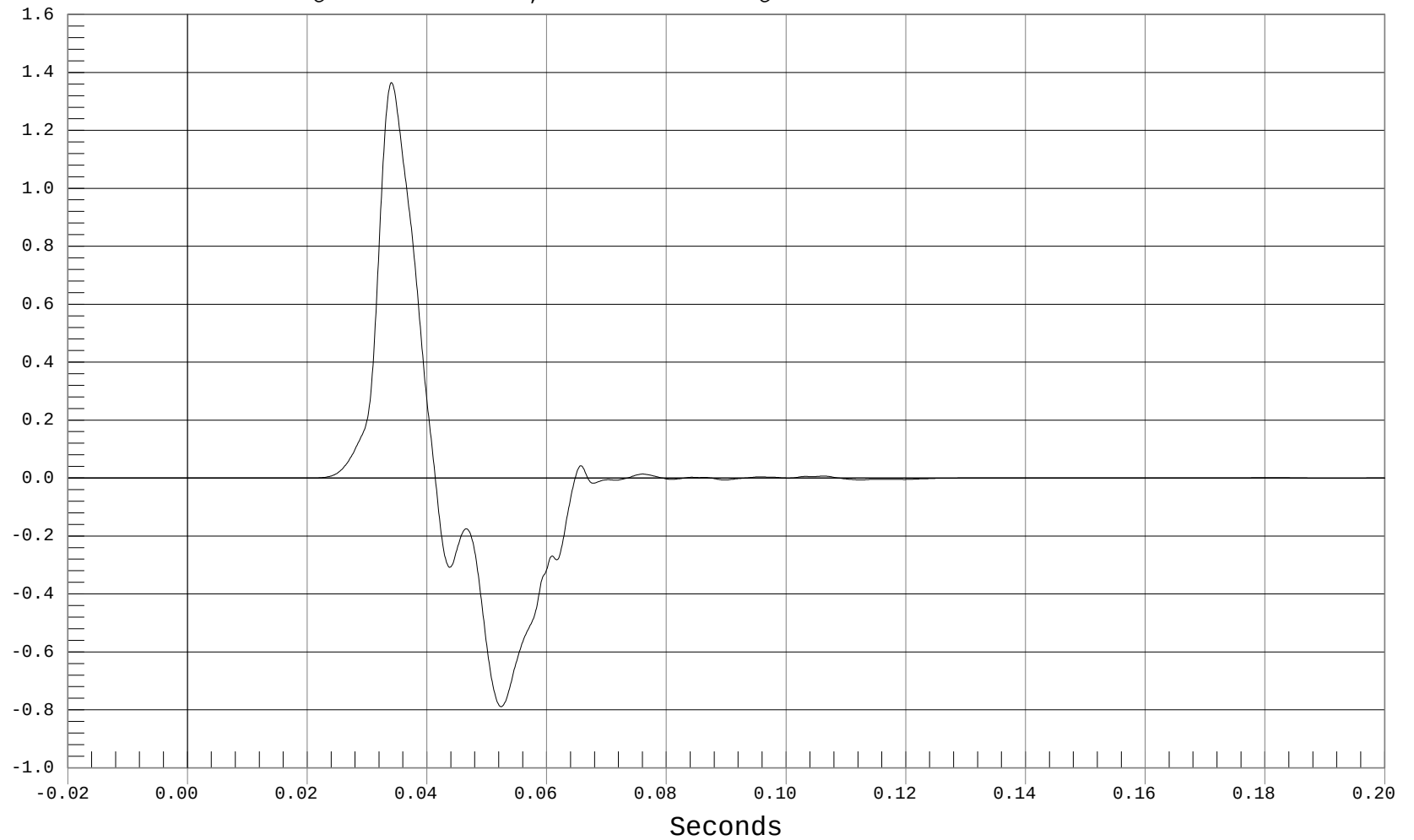
DRIVER MID RIB VISCOUS CRITERIA

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 Viscous Criterion, B01110DV.C27

Ymin = -.79 @ 0.0523 Seconds, Ymax = 1.37 @ 0.0340 Seconds





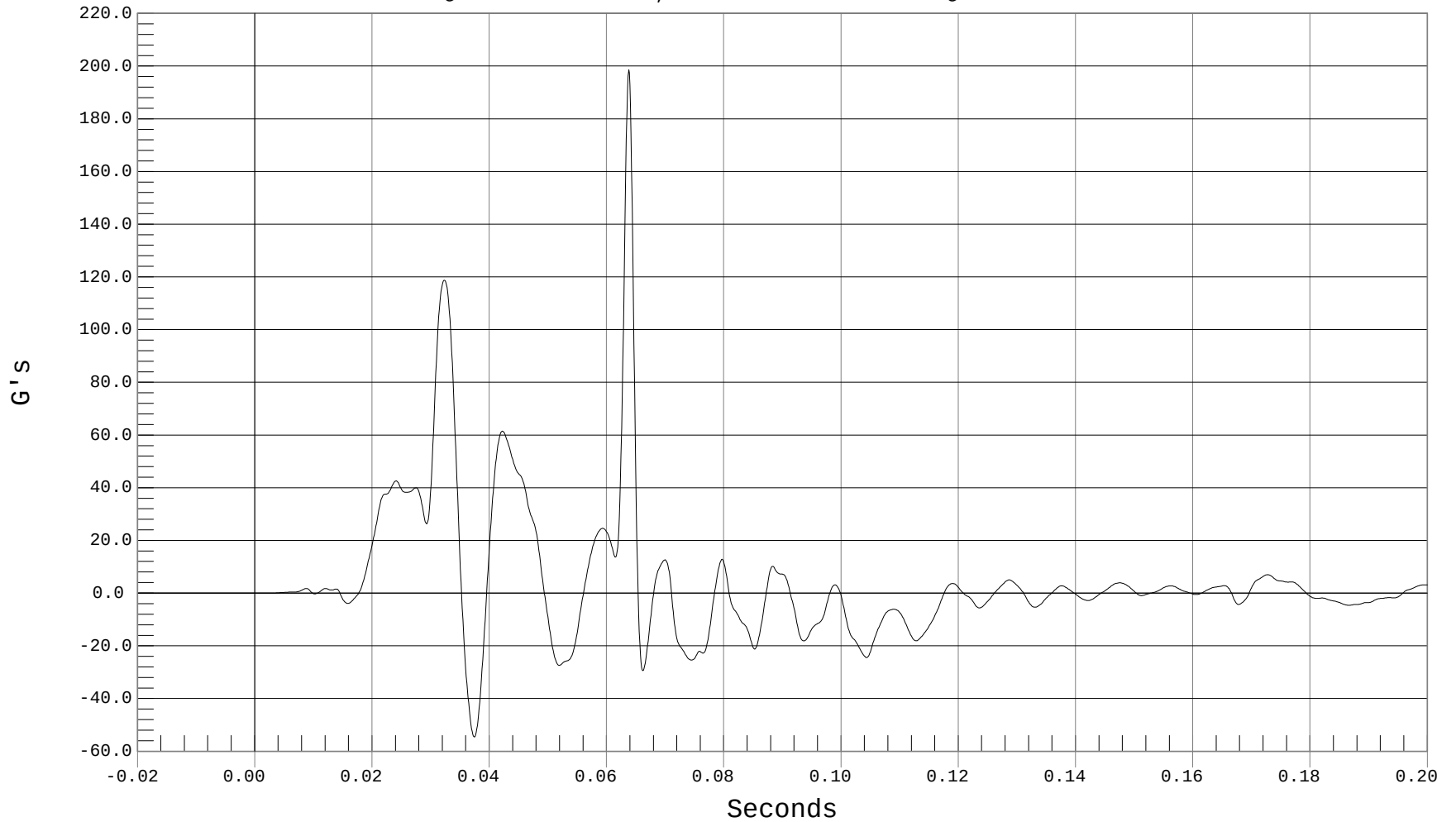
DRIVER LOWER RIB Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 DRIVER LOWER RIB Y, B01110AF.A25

Ymin = -54.64 G's @ 0.0374 Seconds, Ymax = 198.54 G's @ 0.0637 Seconds





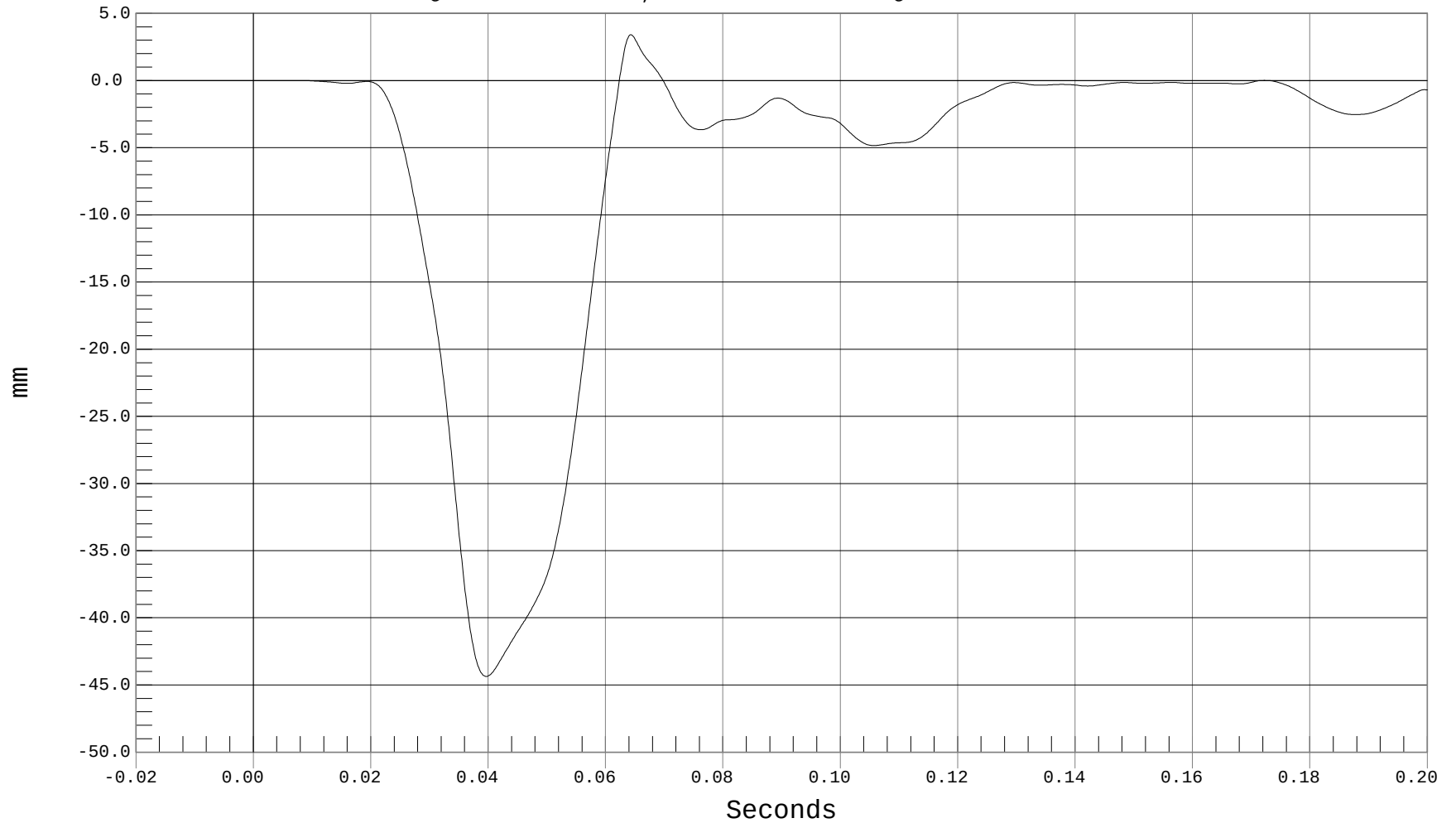
DRIVER LOWER RIB DISPLACEMENT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 DRIVER LOWER RIB DISPLACEMENT, B01110DF.D28

Ymin = -44.36 mm @ 0.0396 Seconds, Ymax = 3.41 mm @ 0.0642 Seconds





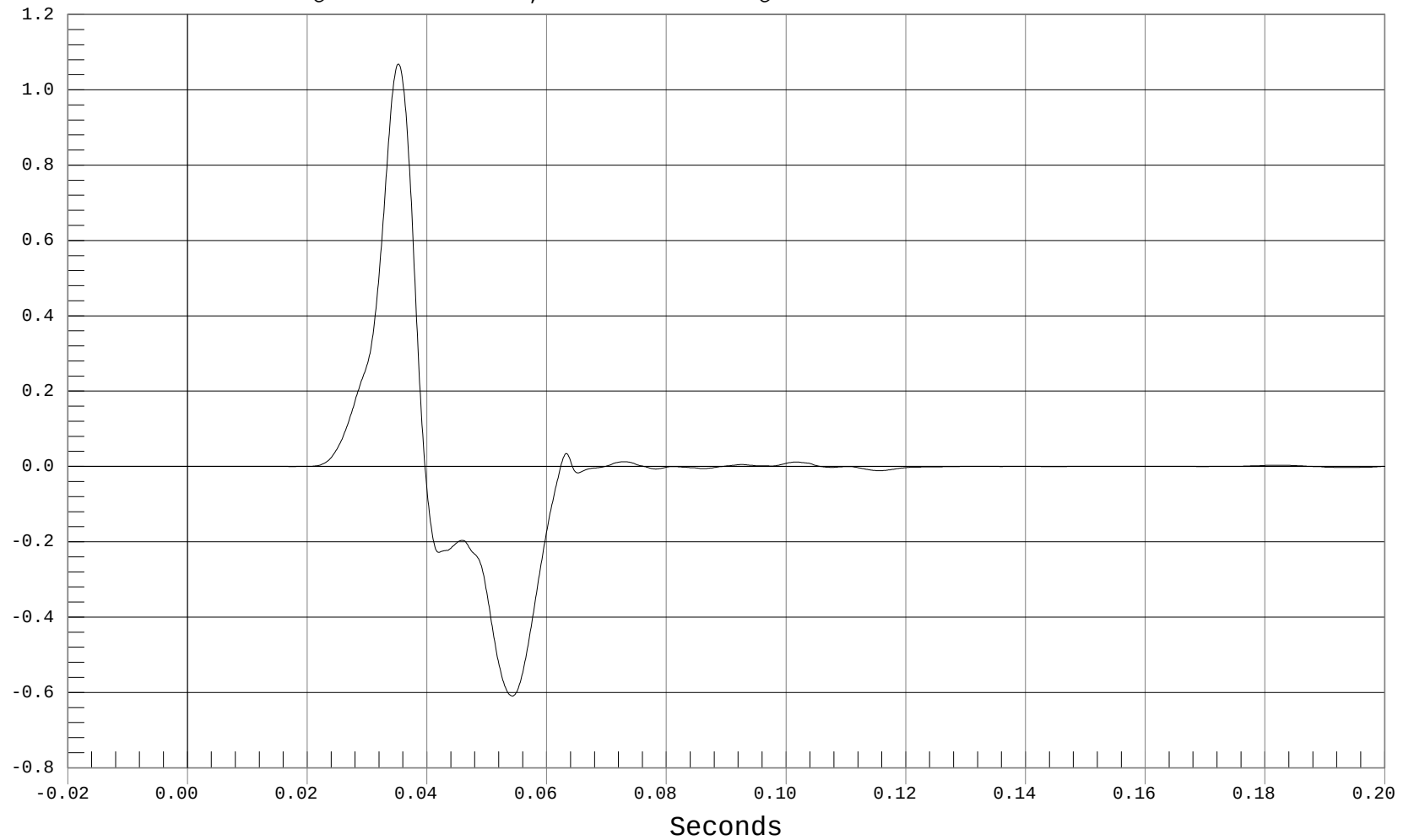
DRIVER LOWER RIB VISCOUS CRITERIA

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 Viscous Criterion, B01110DV.C28

Ymin = -.61 @ 0.0542 Seconds, Ymax = 1.07 @ 0.0351 Seconds





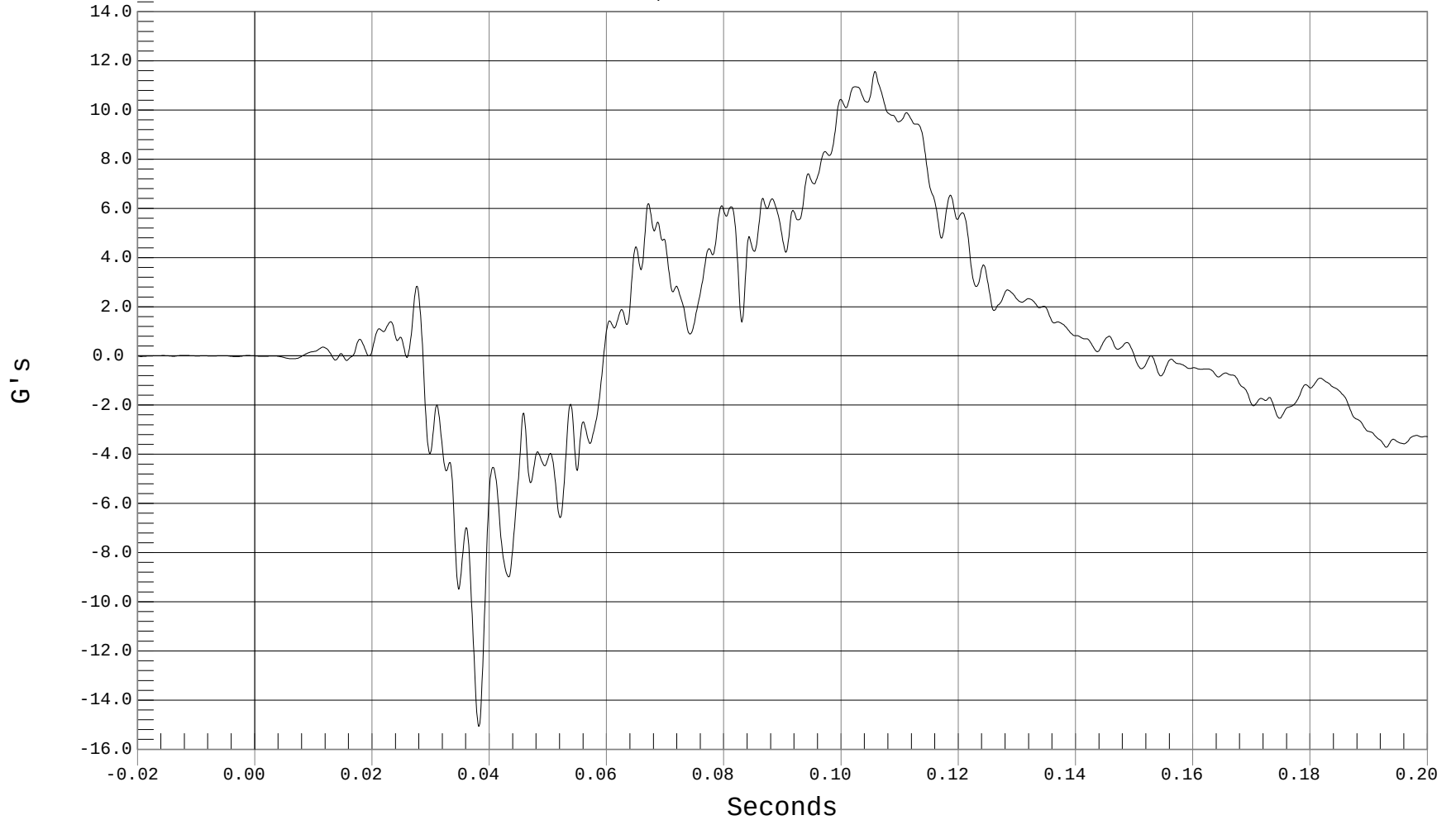
DRIVER LOWER SPINE X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 DRIVER LOWER SPINE X, B01110AF.A29

Ymin = -15.07 G's @ 0.0381 Seconds, Ymax = 11.57 G's @ 0.1057 Seconds





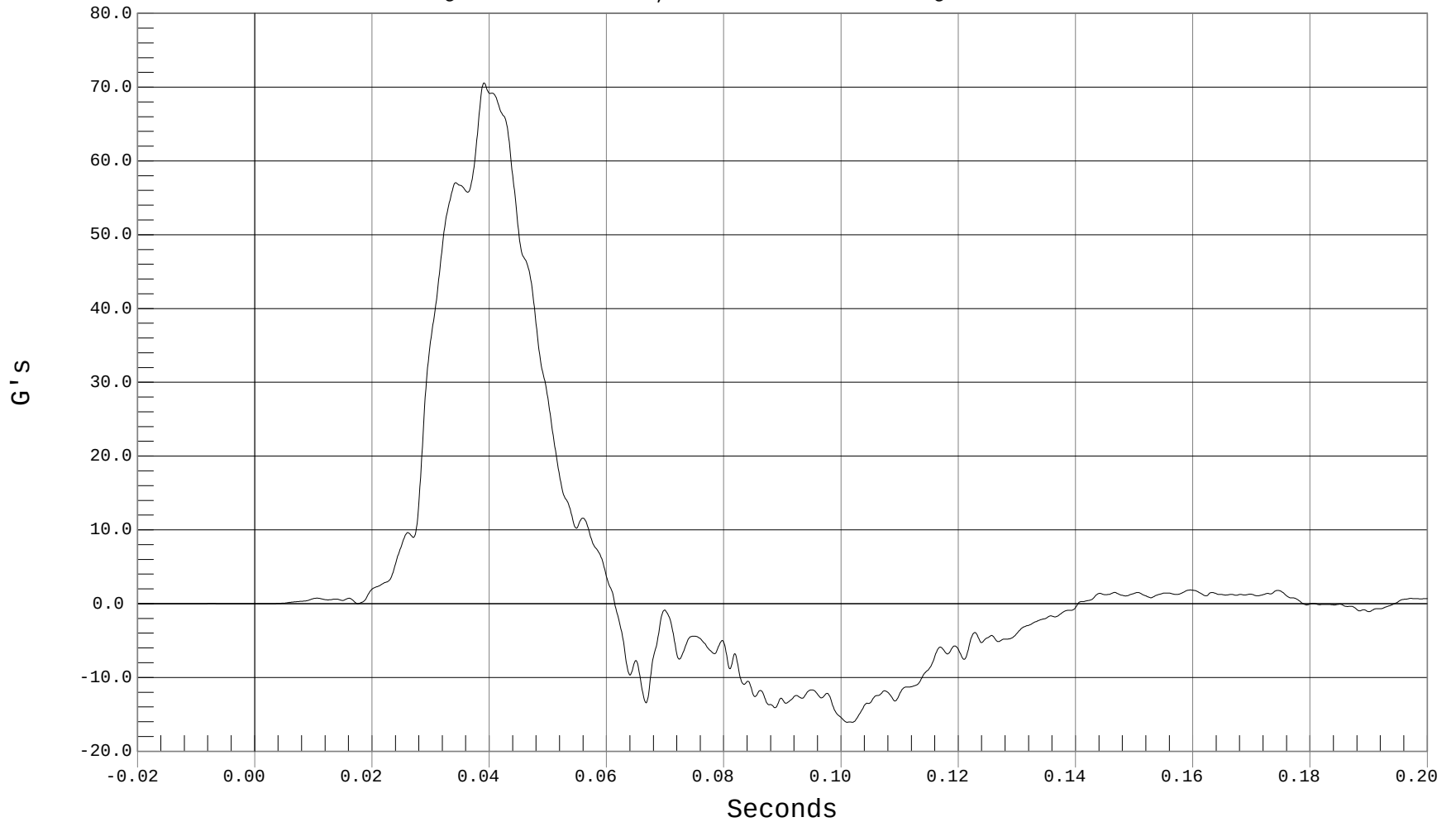
DRIVER LOWER SPINE Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 DRIVER LOWER SPINE Y, B01110AF.A30

Ymin = -16.06 G's @ 0.1009 Seconds, Ymax = 70.58 G's @ 0.0390 Seconds





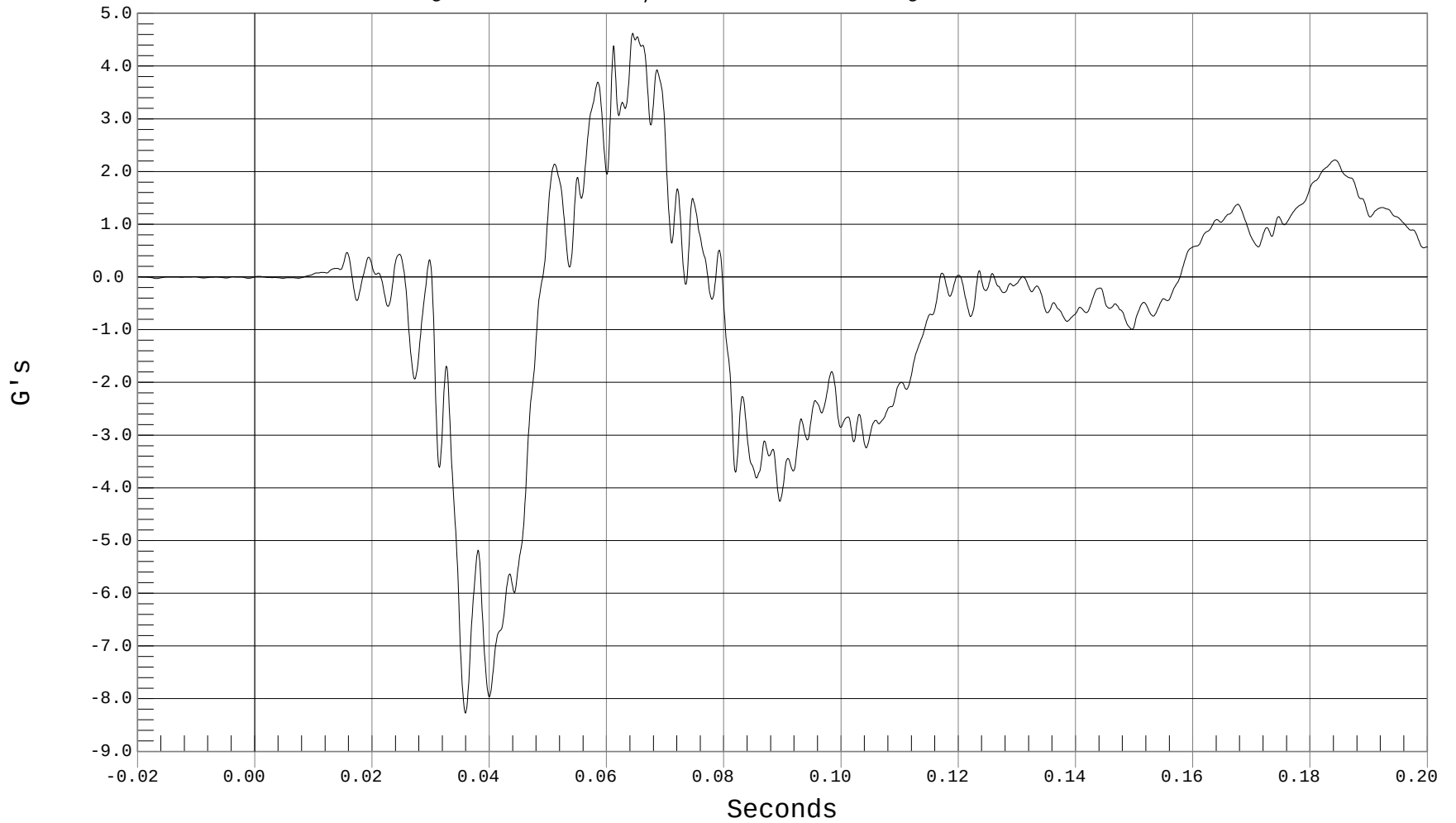
DRIVER LOWER SPINE Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 DRIVER LOWER SPINE Z, B01110AF.A31

Ymin = -8.27 G's @ 0.0359 Seconds, Ymax = 4.62 G's @ 0.0644 Seconds





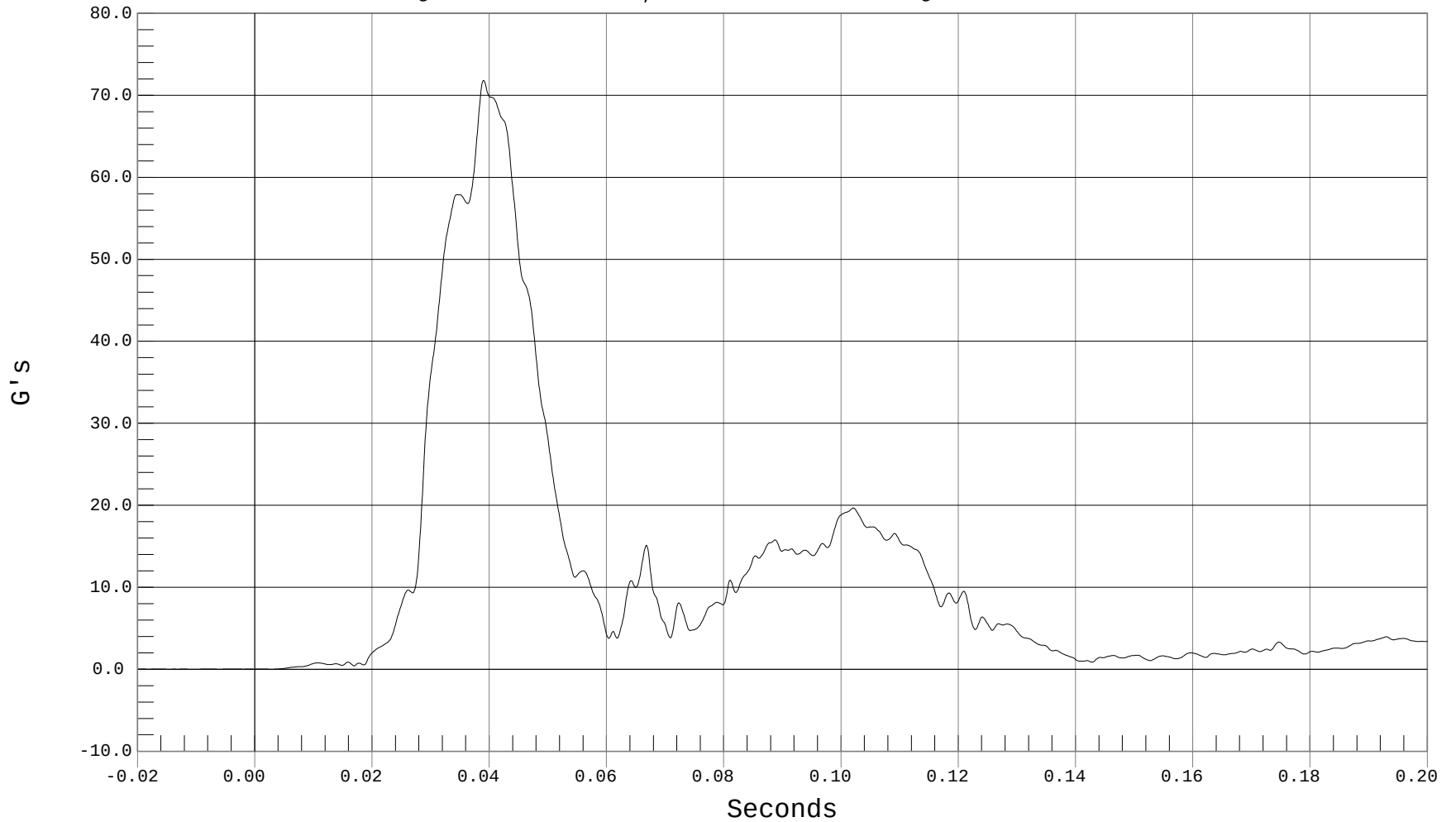
DRIVER LOWER SPINE RESULTANT ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 DRIVER LOWER SPINE RESULTANT, B01110AV.A29

Ymin = .01 G's @ -0.0104 Seconds, Ymax = 71.83 G's @ 0.0389 Seconds





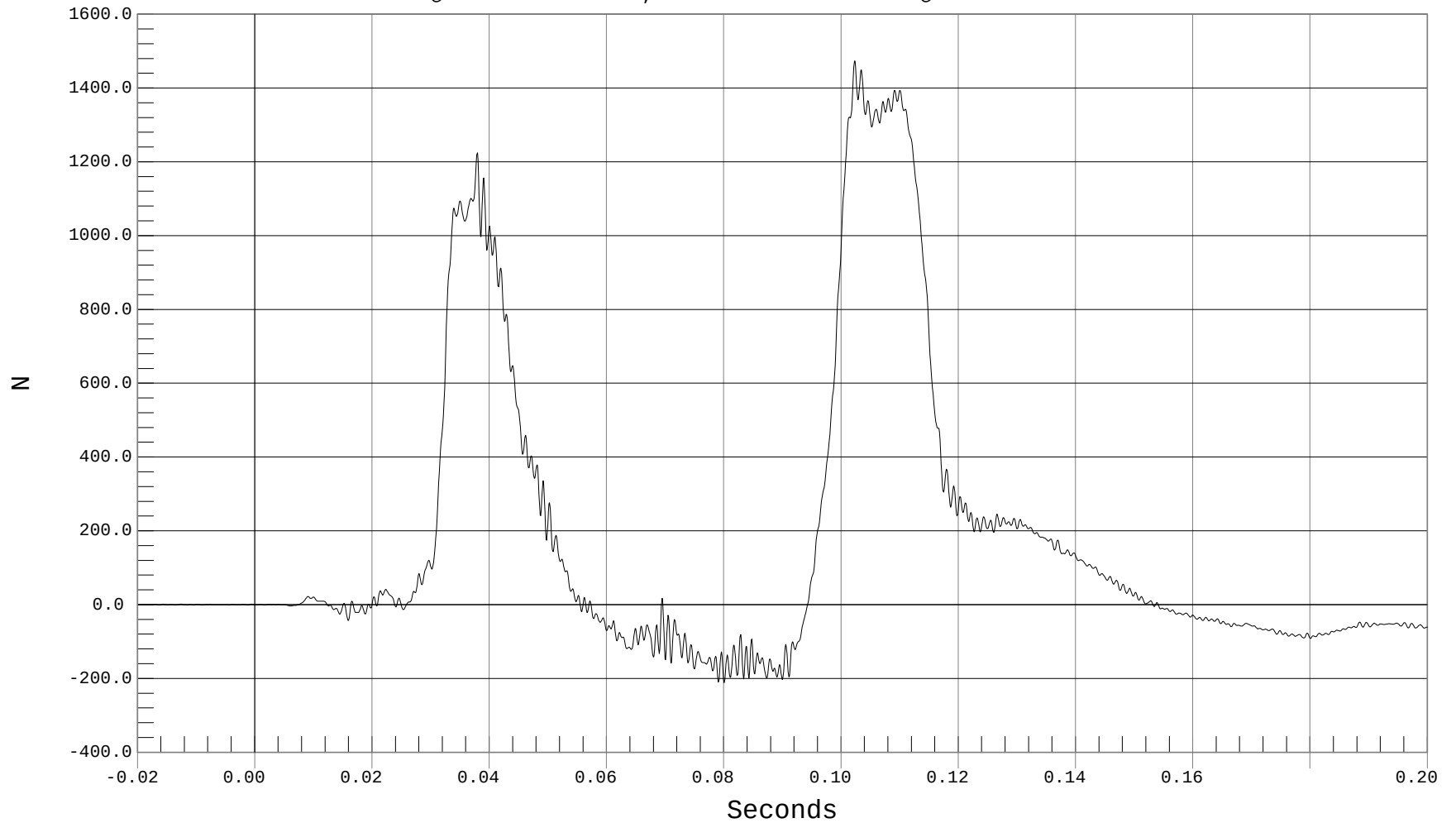
DRIVER TORSO FORCE X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER TORSO FORCE X, B01110FF.F33

Ymin = -211.32 N @ 0.0800 Seconds, Ymax = 1473.05 N @ 0.1022 Seconds





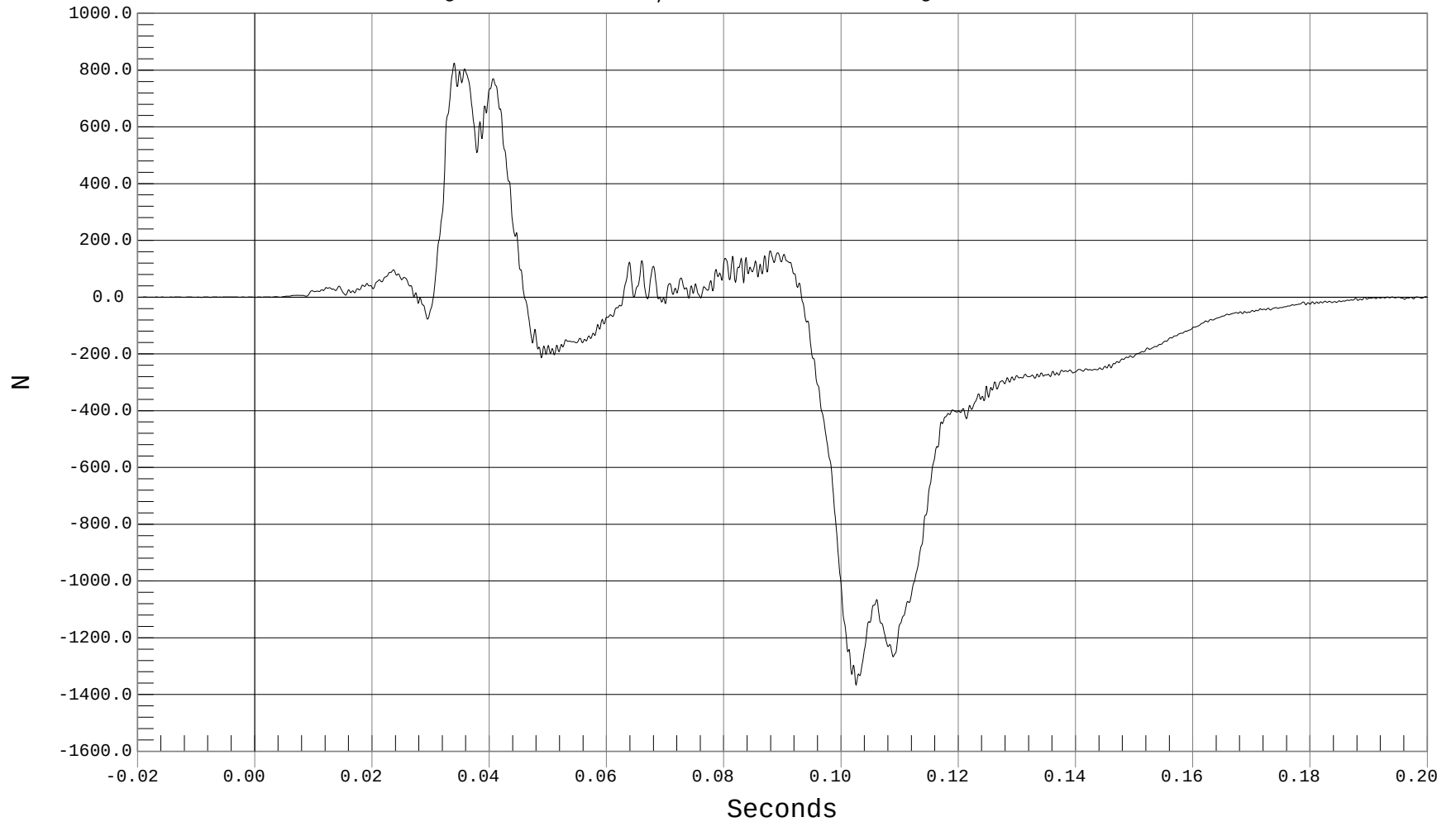
DRIVER TORSO FORCE Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER TORSO FORCE Y, B01110FF.F34

Ymin = -1366.97 N @ 0.1025 Seconds, Ymax = 825.22 N @ 0.0339 Seconds





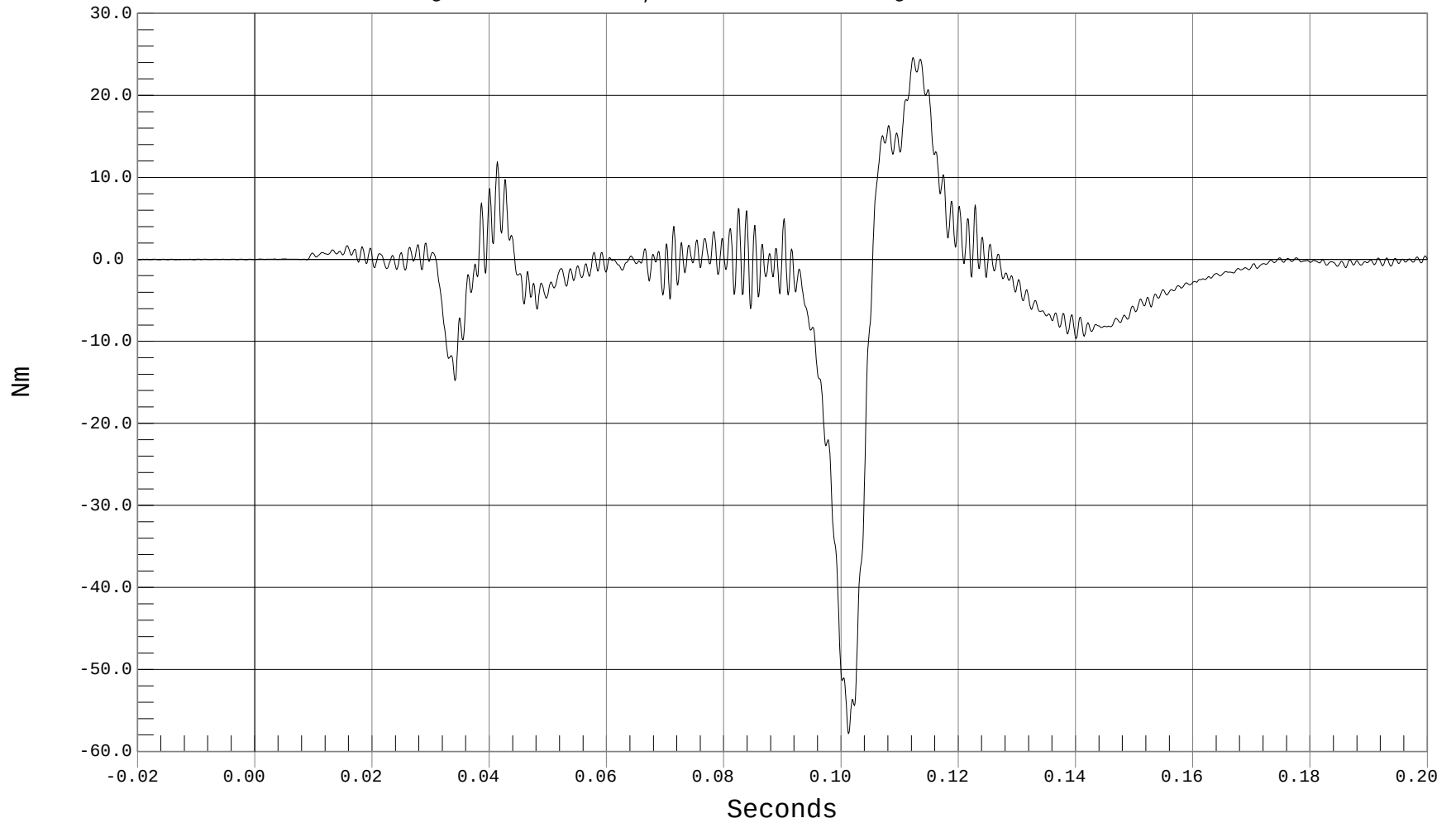
DRIVER TORSO MOMENT Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER TORSO MOMENT Y, B01110MF.M35

Ymin = -57.85 Nm @ 0.1012 Seconds, Ymax = 24.6 Nm @ 0.1122 Seconds





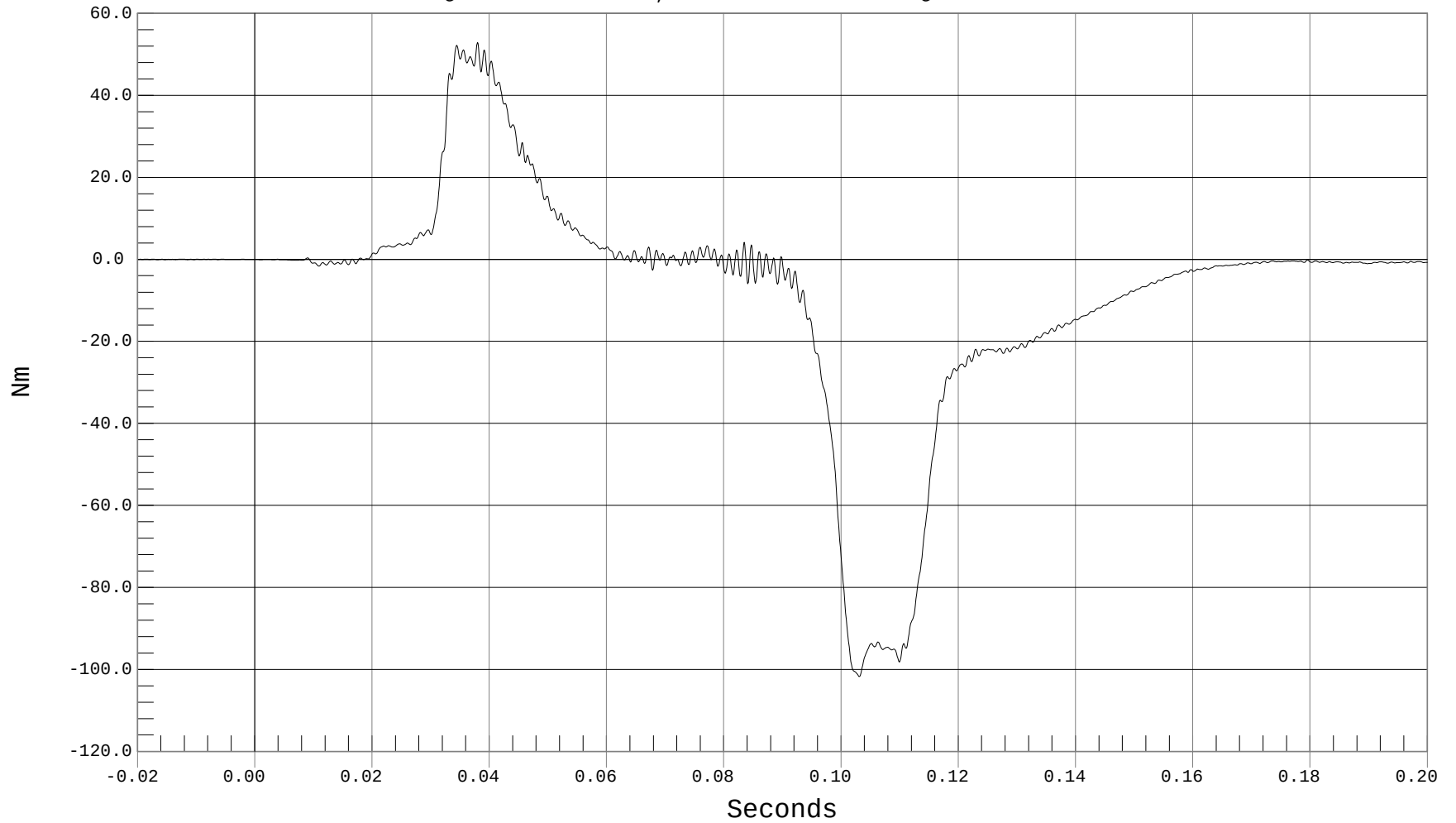
DRIVER TORSO MOMENT Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER TORSO MOMENT Z, B01110MF.M36

Ymin = -101.72 Nm @ 0.1030 Seconds, Ymax = 52.94 Nm @ 0.0379 Seconds





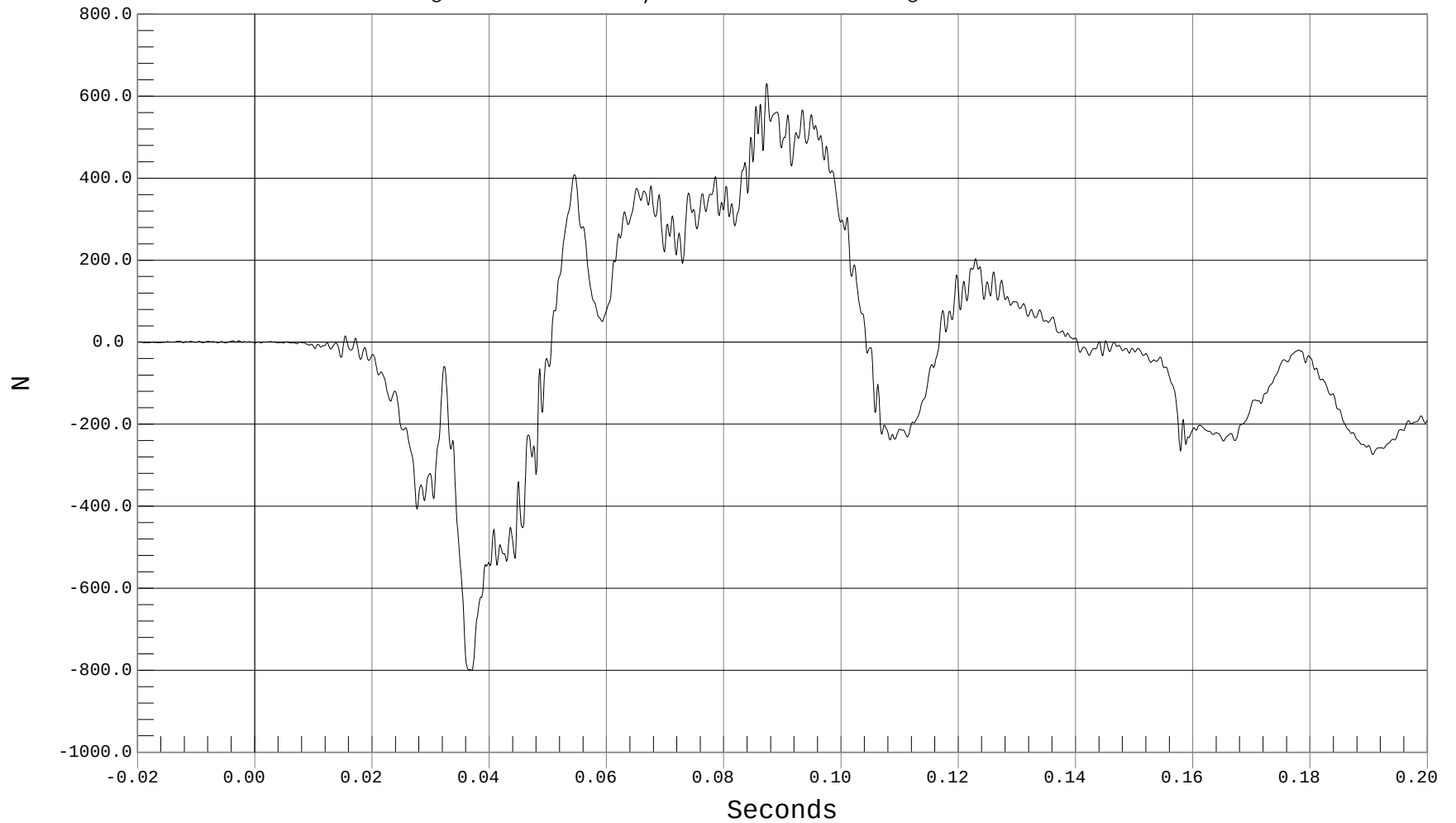
DRIVER T-12 FORCE X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER T-12 FORCE X, B01110FF.F37

Ymin = -800.71 N @ 0.0369 Seconds, Ymax = 631.08 N @ 0.0872 Seconds





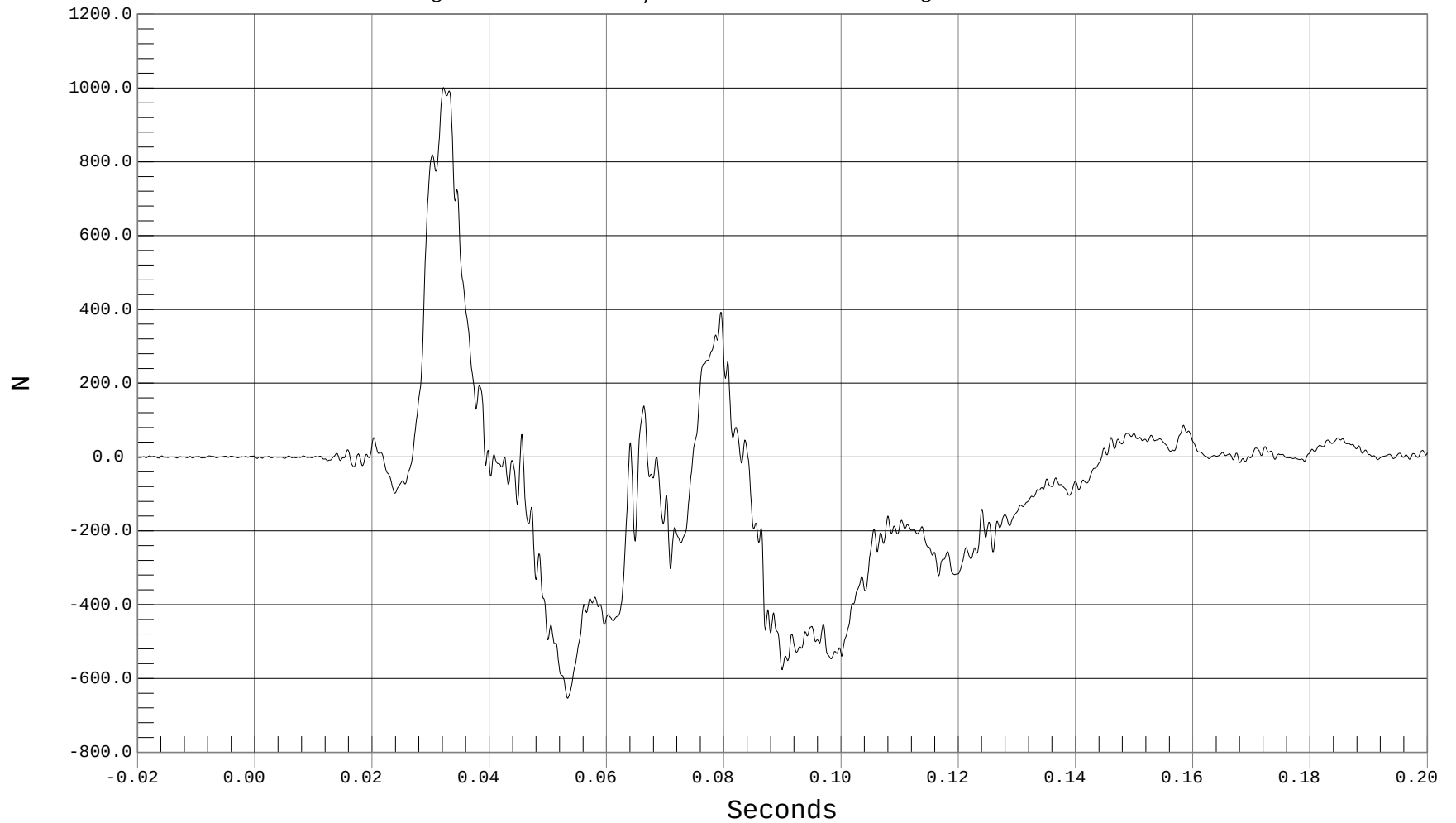
DRIVER T-12 FORCE Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER T-12 FORCE Y, B01110FF.F38

Ymin = -654.05 N @ 0.0533 Seconds, Ymax = 1001.34 N @ 0.0321 Seconds





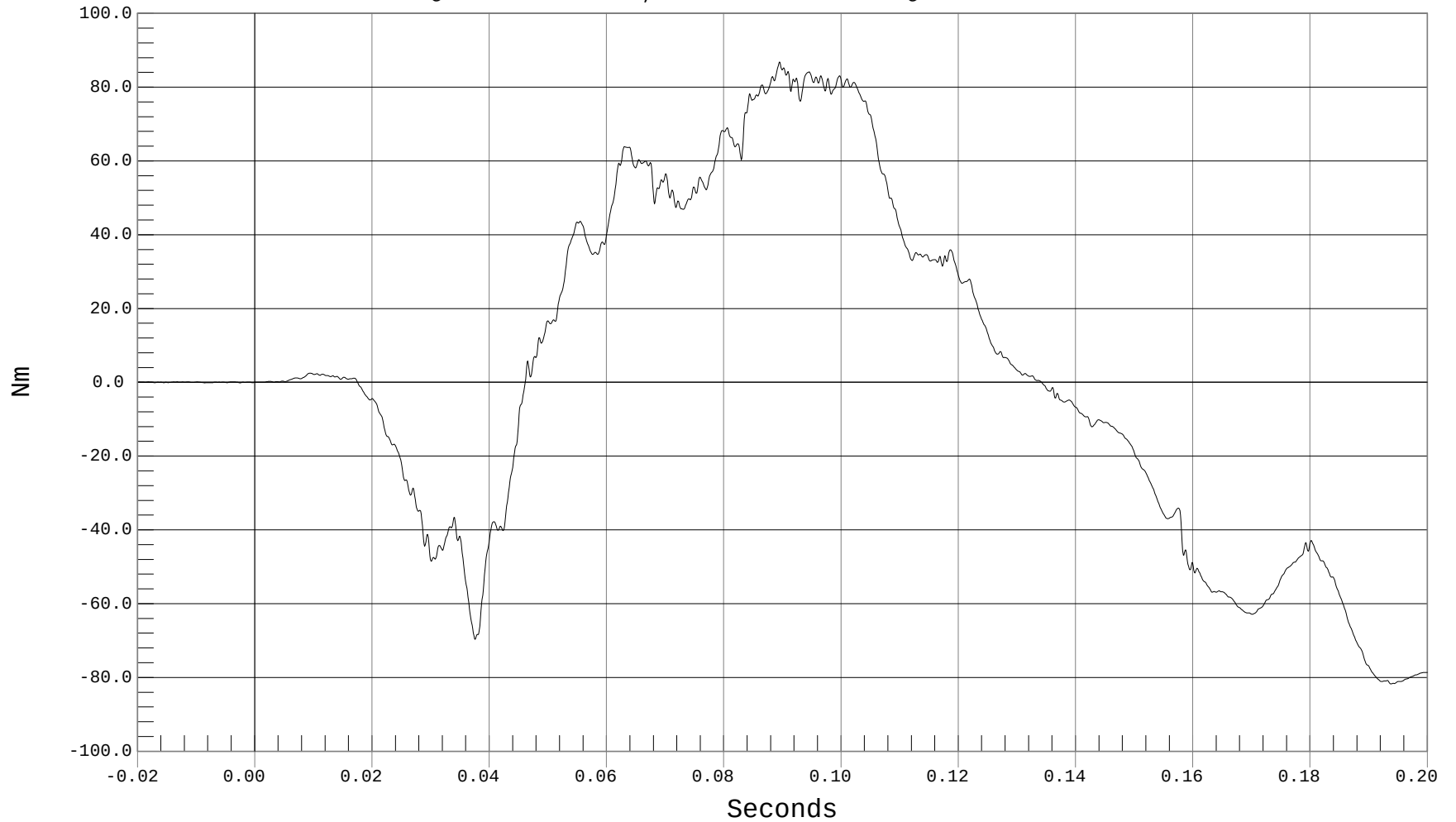
DRIVER T-12 MOMENT Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER T-12 MOMENT Y, B01110MF.M40

Ymin = -81.76 Nm @ 0.1937 Seconds, Ymax = 86.86 Nm @ 0.0894 Seconds





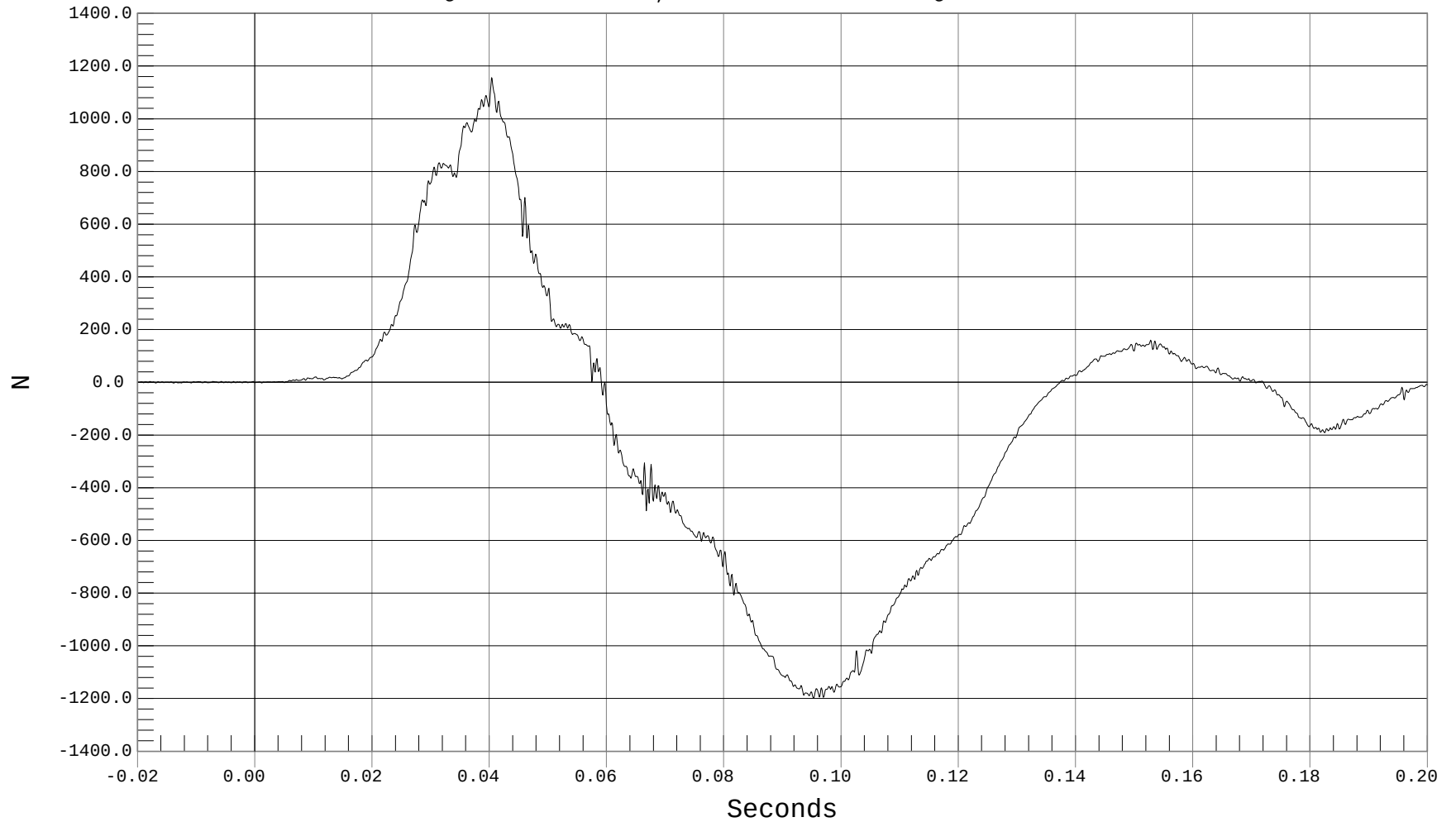
DRIVER LUMBAR FORCE Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER LUMBAR FORCE Y, B01110FT.F94

Ymin = -1198.78 N @ 0.0952 Seconds, Ymax = 1155.95 N @ 0.0403 Seconds





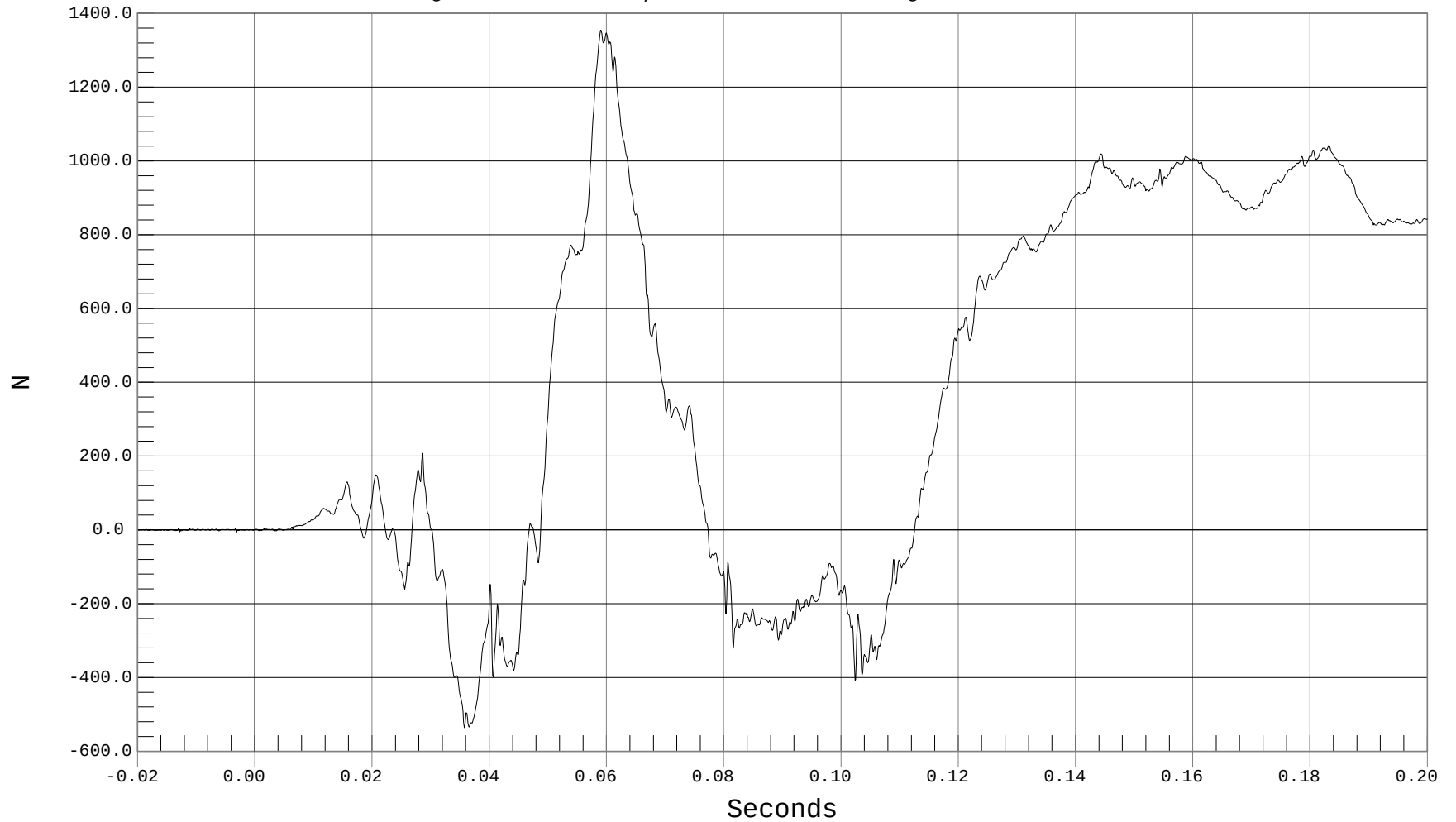
DRIVER LUMBAR FORCE Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER LUMBAR FORCE Z, B01110FT.F95

Ymin = -536.53 N @ 0.0357 Seconds, Ymax = 1354.3 N @ 0.0589 Seconds





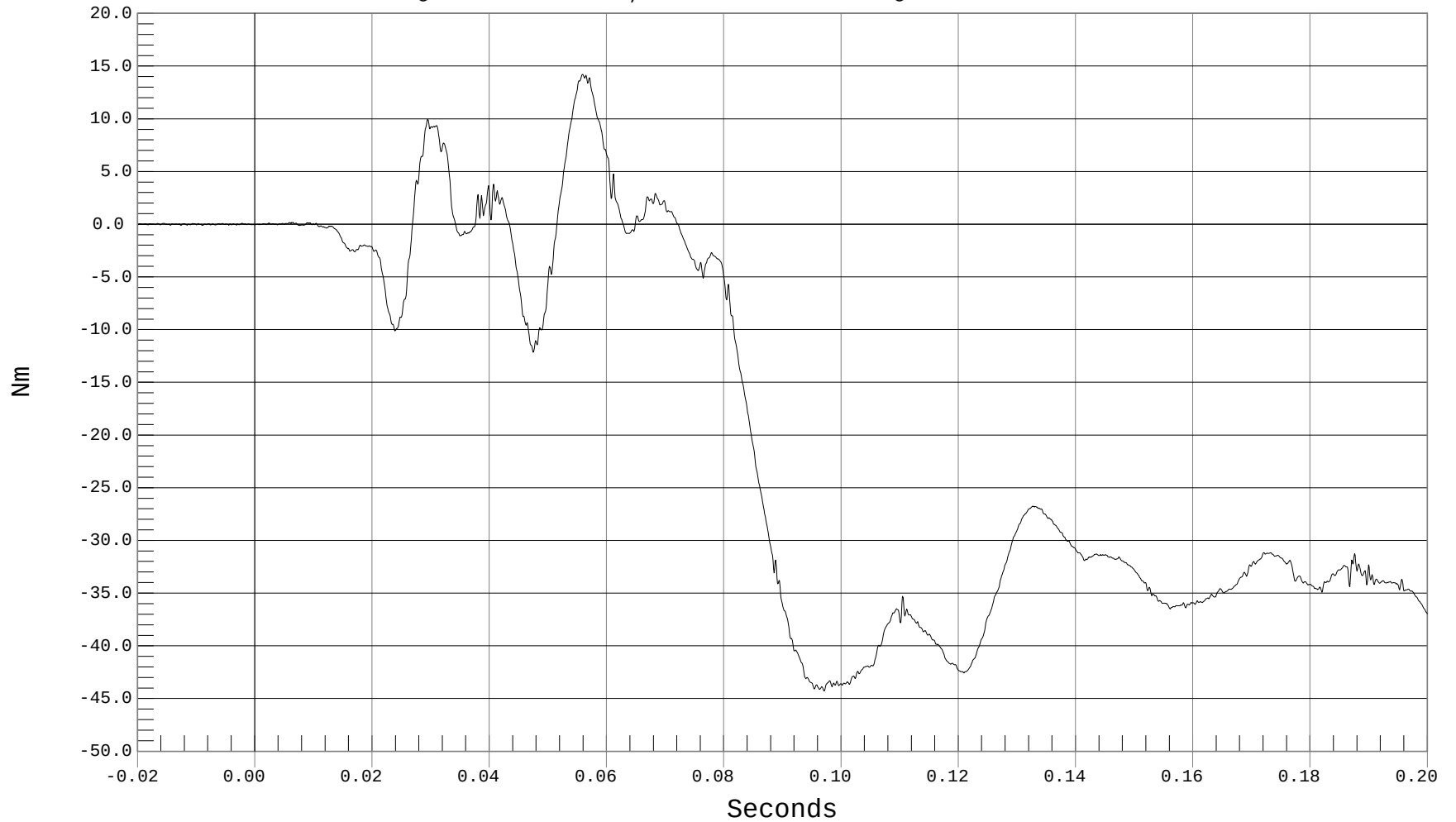
DRIVER LUMBAR MOMENT X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER LUMBAR MOMENT X, B01110MT.M96

Ymin = -44.3 Nm @ 0.0970 Seconds, Ymax = 14.22 Nm @ 0.0558 Seconds





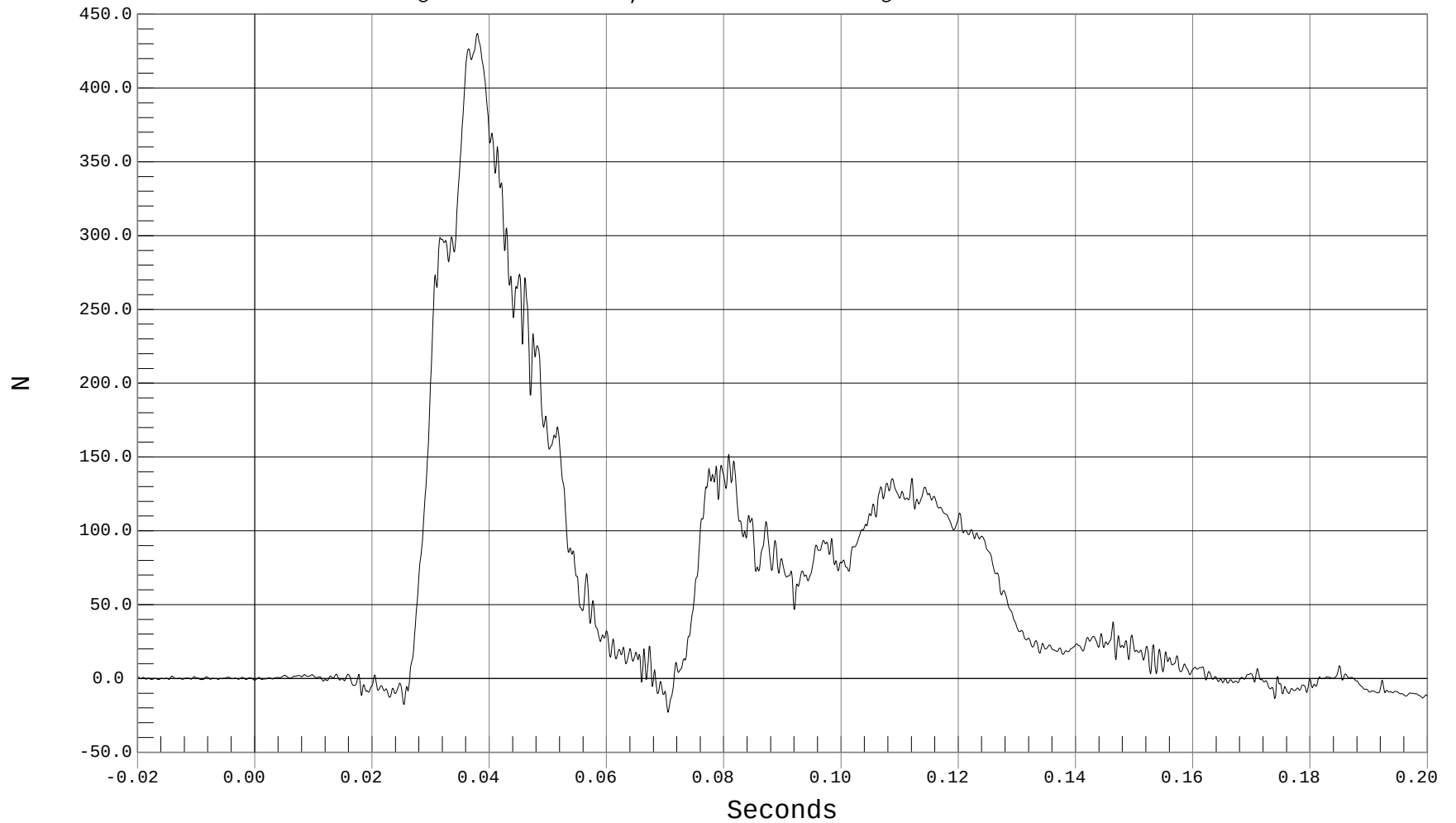
DRIVER ABDOMEN FRONT FORCE

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER FRONT ABDOMEN FORCE, B01110FF.F41

Ymin = -22.93 N @ 0.0704 Seconds, Ymax = 436.9 N @ 0.0379 Seconds





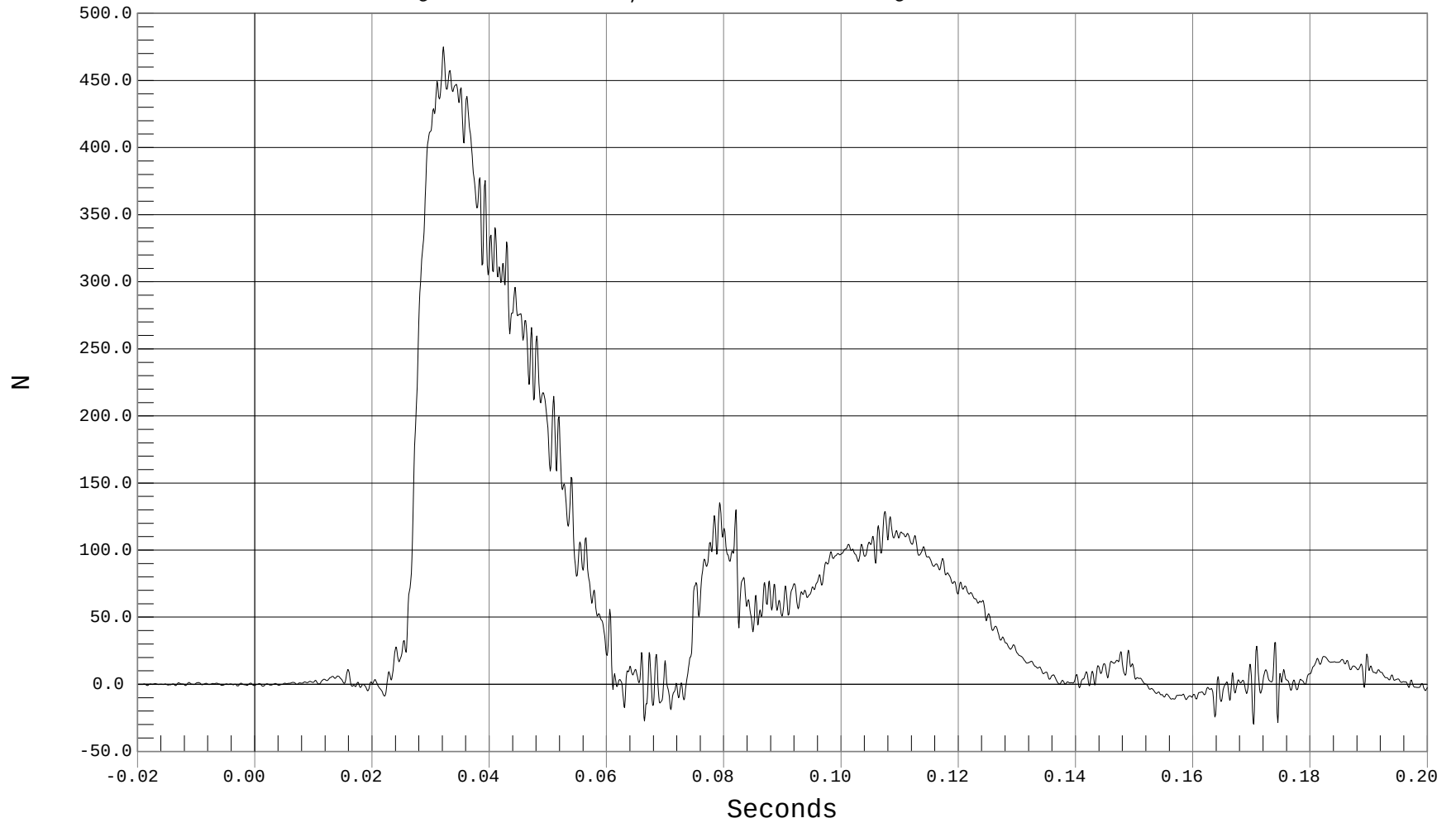
DRIVER ABDOMEN MID FORCE

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER MID ABDOMEN FORCE, B01110FF.F42

Ymin = -29.82 N @ 0.1703 Seconds, Ymax = 474.97 N @ 0.0321 Seconds





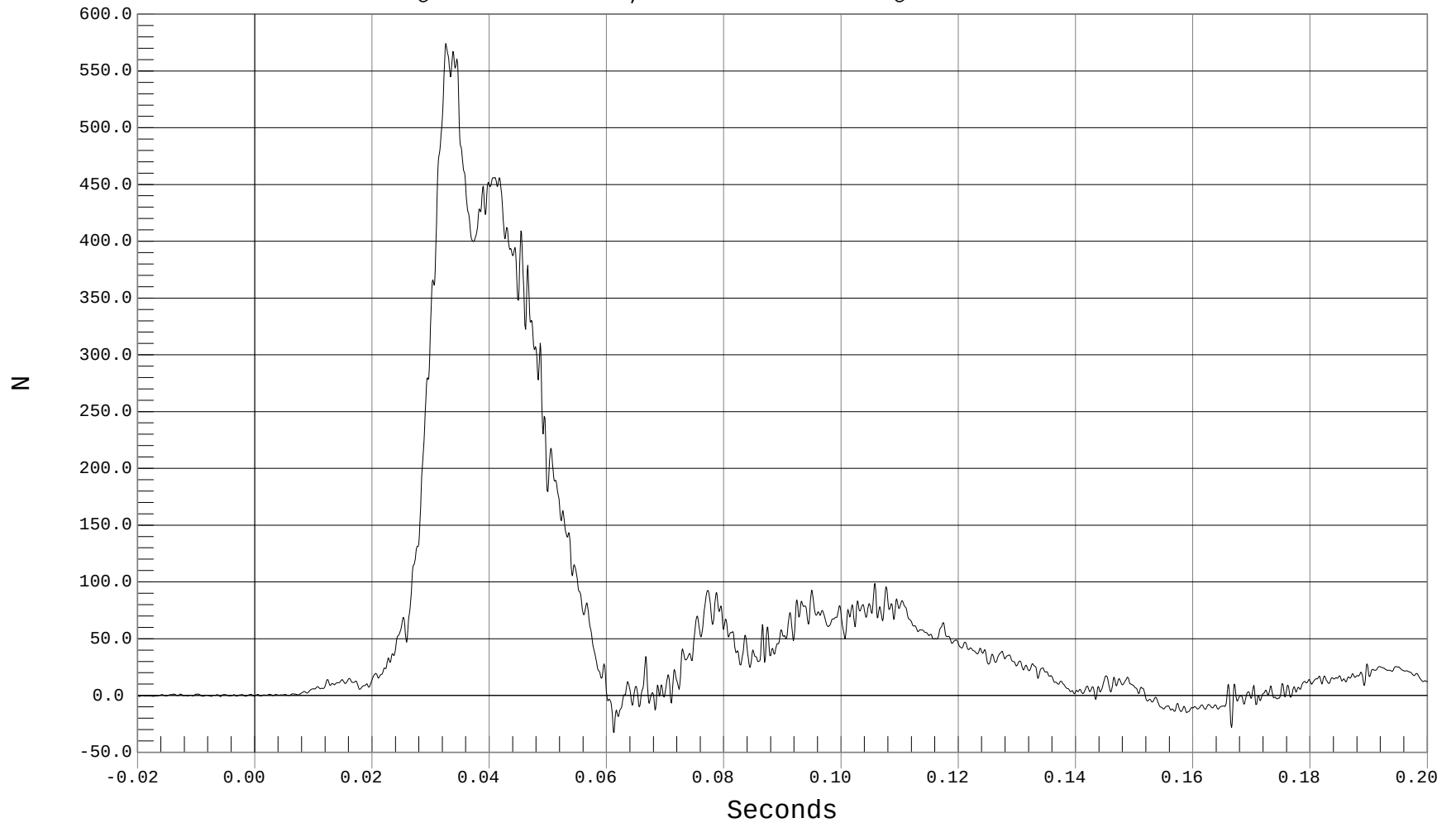
DRIVER ABDOMEN REAR FORCE

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER REAR ABDOMEN FORCE, B01110FF.F43

Ymin = -32.73 N @ 0.0612 Seconds, Ymax = 574.15 N @ 0.0325 Seconds





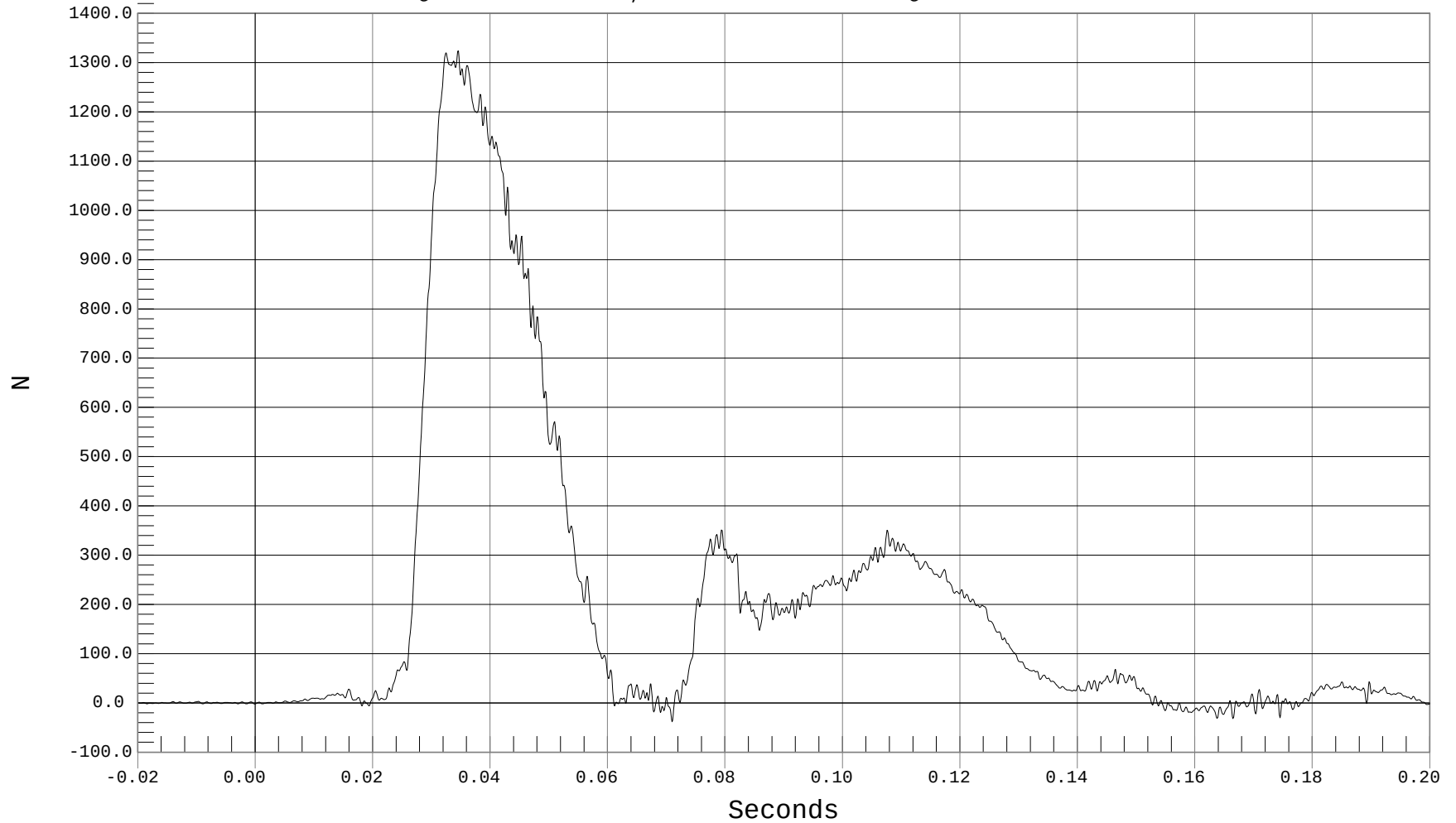
DRIVER SUMMED ABDOMEN FORCE

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER SUMMED ABDOMEN FORCE, B01110FU.F41

Ymin = -38.14 N @ 0.0709 Seconds, Ymax = 1323.79 N @ 0.0345 Seconds





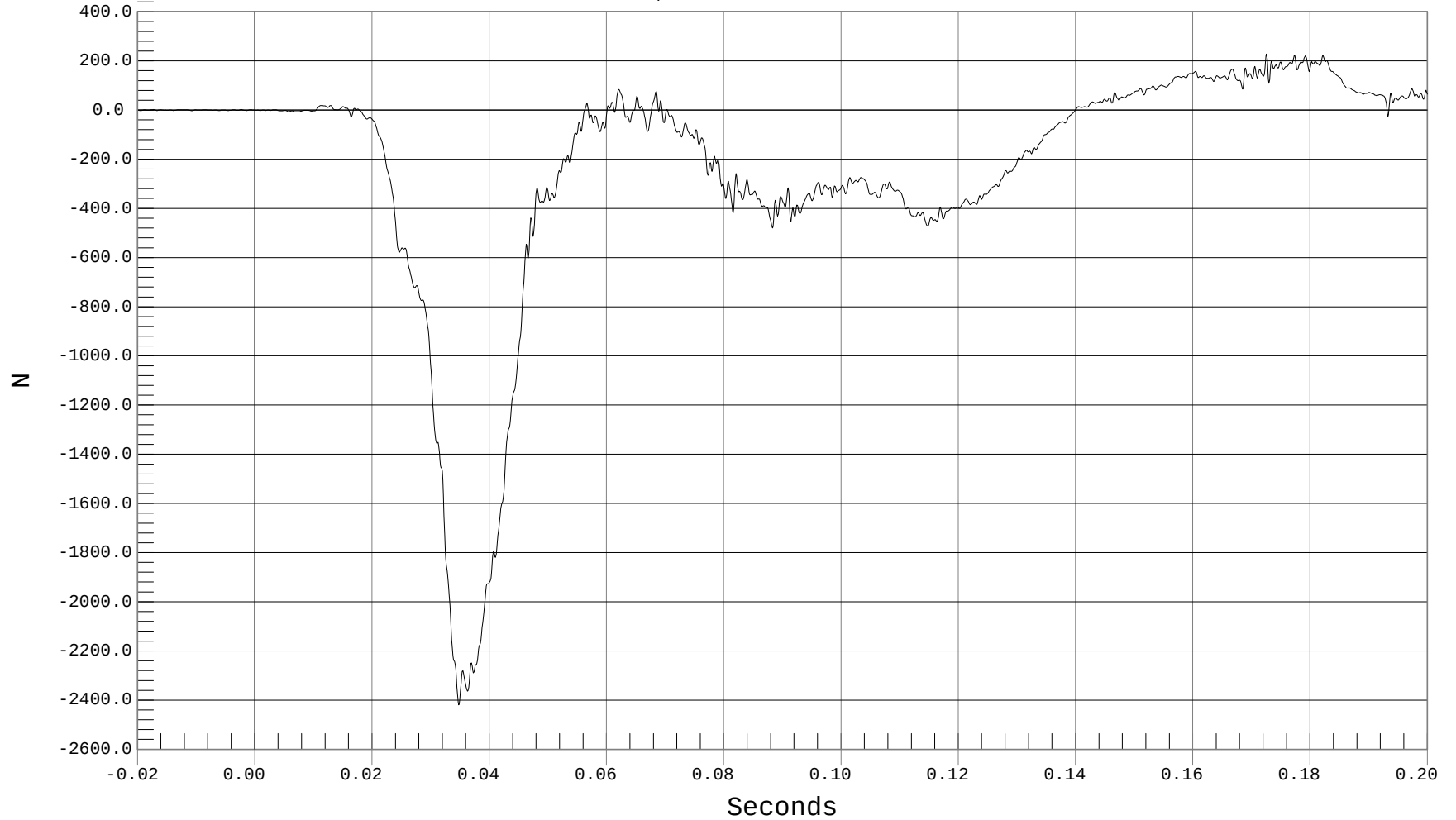
DRIVER PUBIC SYMPHYSIS FORCE

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER PUBIC SYMPHYSIS FORCE, B01110FF.F44

Ymin = -2420.06 N @ 0.0347 Seconds, Ymax = 228.02 N @ 0.1725 Seconds





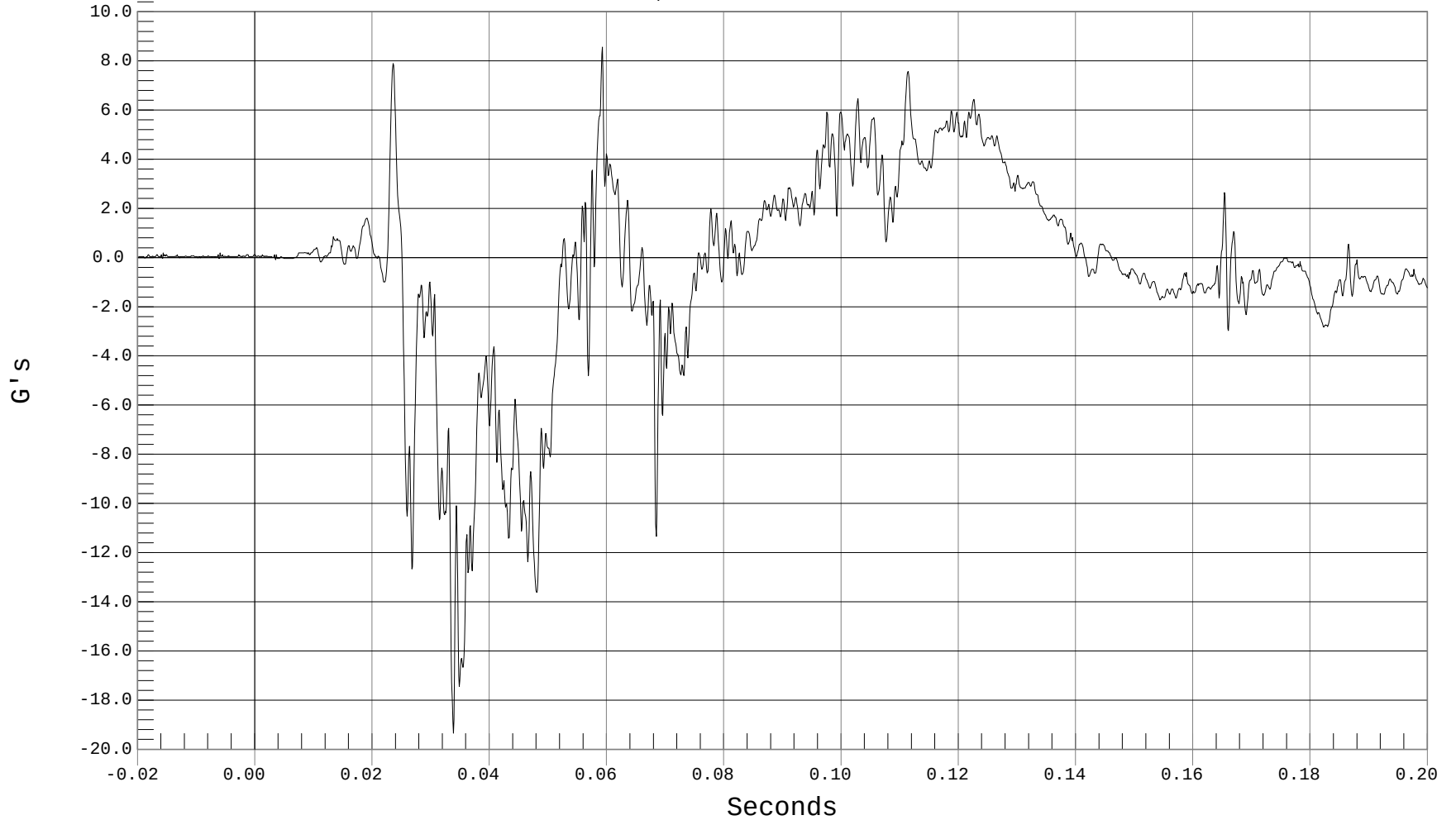
DRIVER PELVIS X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER PELVIS X, B01110AT.A45

Ymin = -19.35 G's @ 0.0338 Seconds, Ymax = 8.56 G's @ 0.0592 Seconds





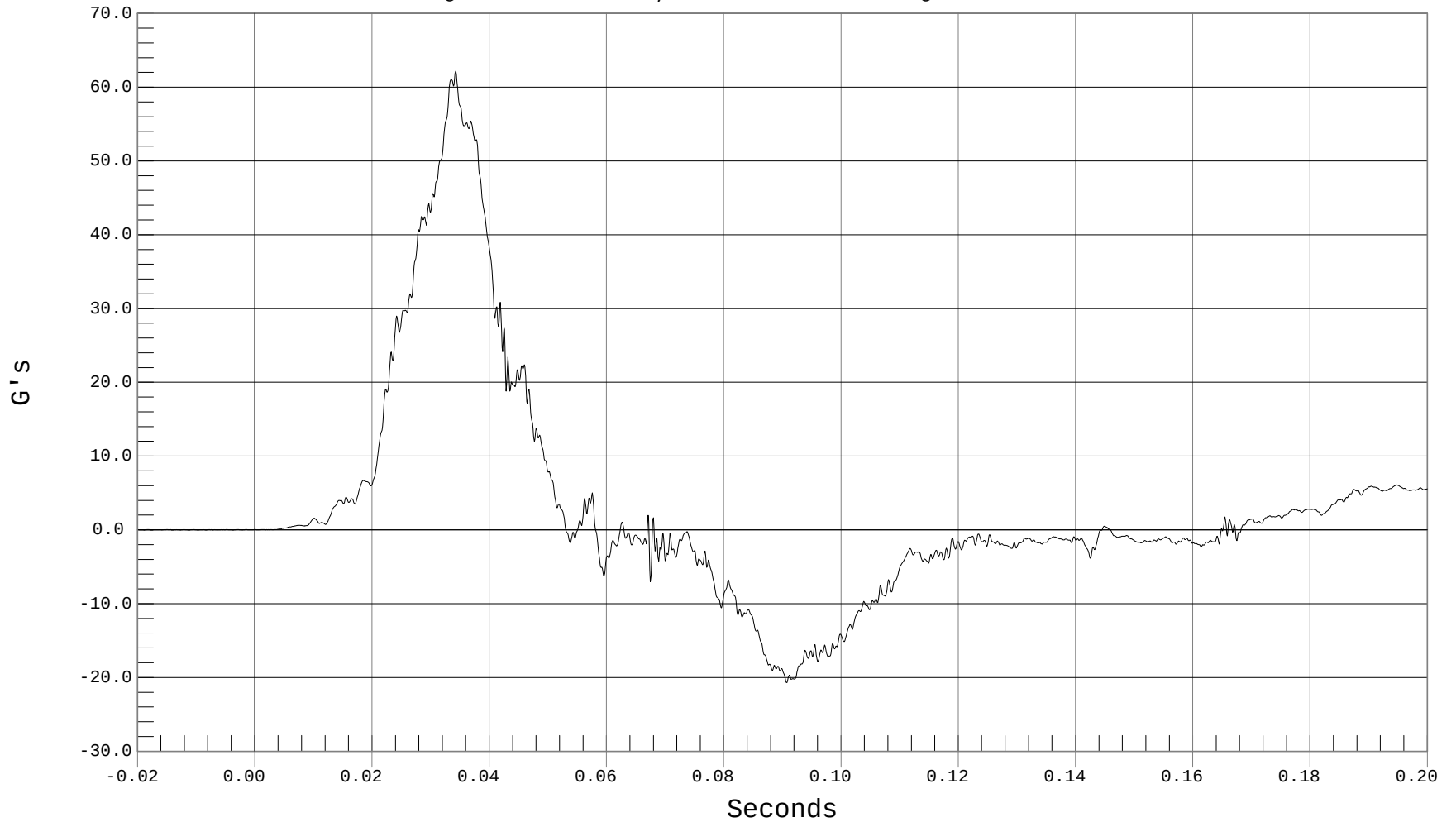
DRIVER PELVIS Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER PELVIS Y, B01110AT.A46

Ymin = -20.68 G's @ 0.0906 Seconds, Ymax = 62.2 G's @ 0.0342 Seconds





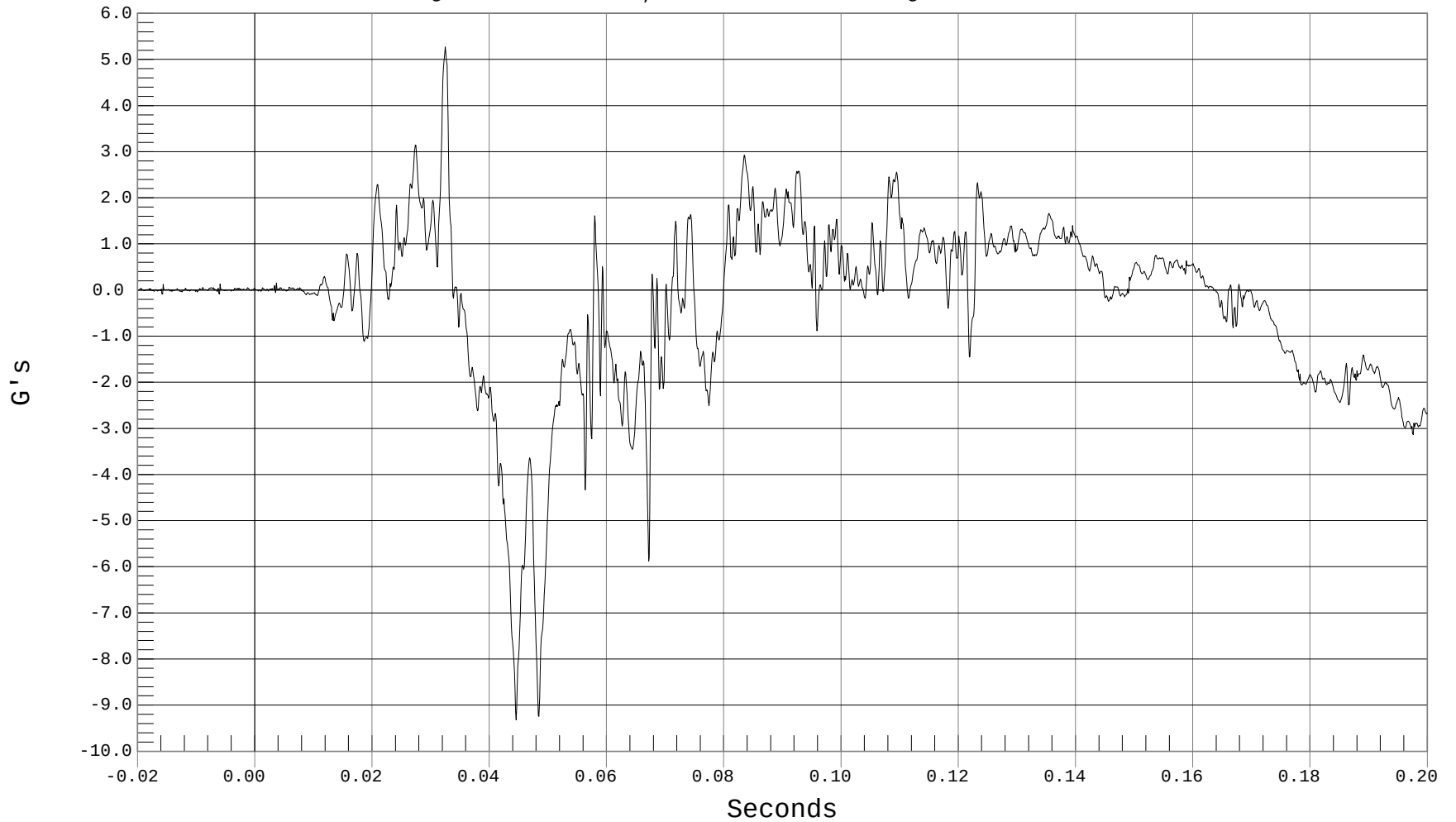
DRIVER PELVIS Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER PELVIS Z, B01110AT.A47

Ymin = -9.32 G's @ 0.0445 Seconds, Ymax = 5.27 G's @ 0.0324 Seconds





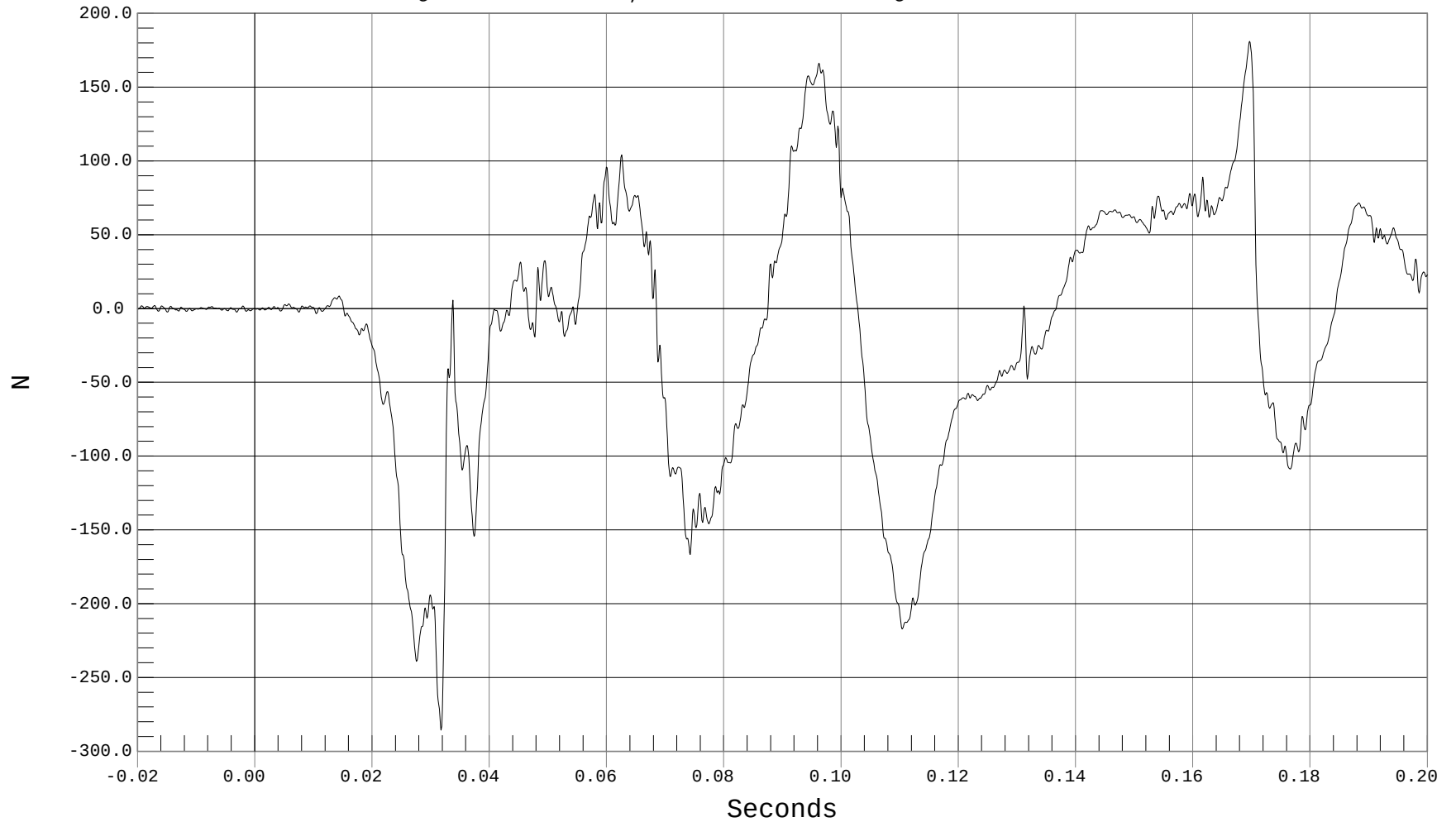
DRIVER LEFT FEMUR FORCE X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR FORCE X, B01110FF.F54

Ymin = -285.7 N @ 0.0317 Seconds, Ymax = 181.13 N @ 0.1696 Seconds





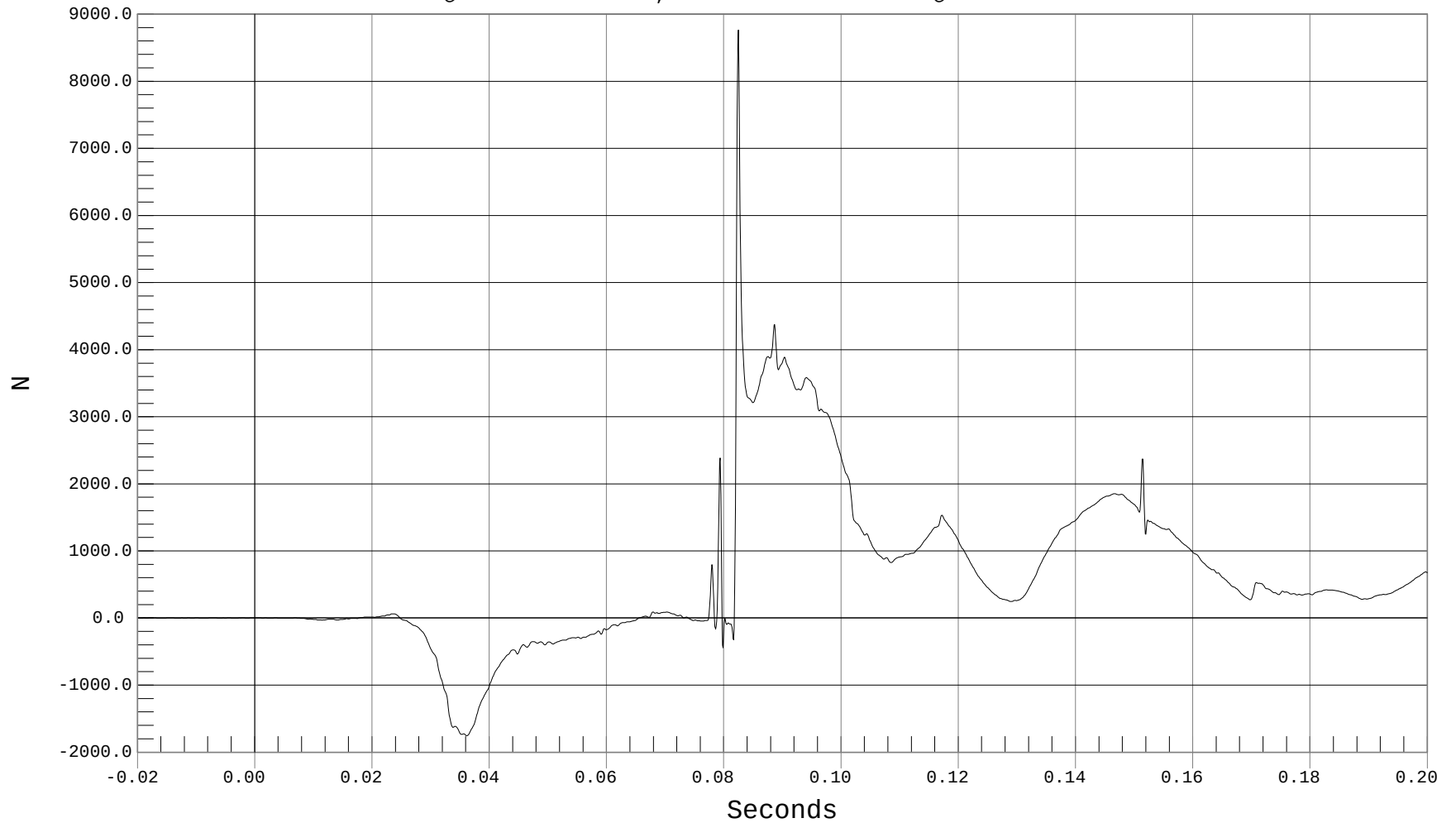
DRIVER LEFT FEMUR FORCE Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR FORCE Y, B01110FF.F55

Ymin = -1755.22 N @ 0.0361 Seconds, Ymax = 8763.44 N @ 0.0824 Seconds





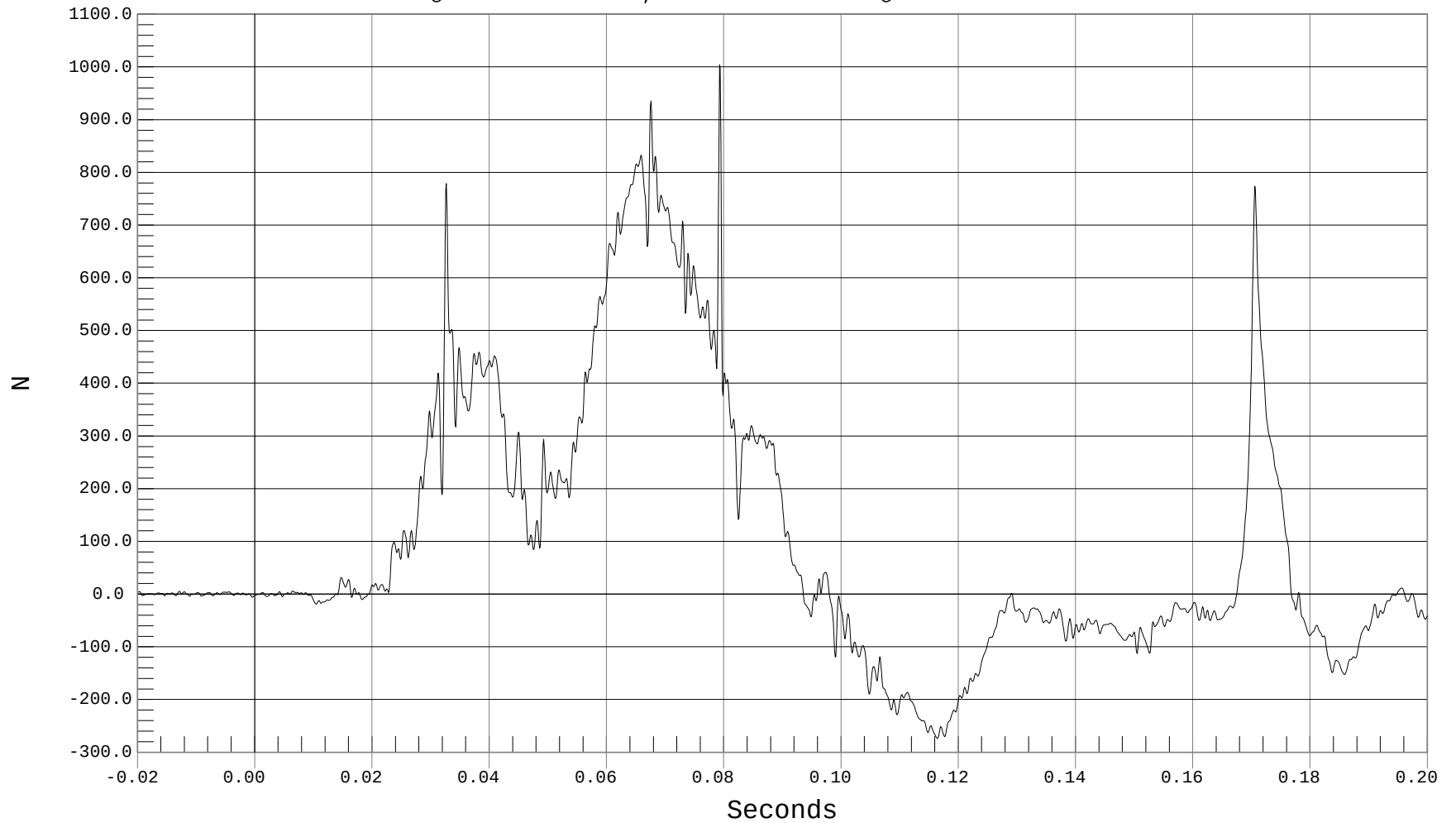
DRIVER LEFT FEMUR FORCE Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR FORCE Z, B01110FF.F56

Ymin = -273.46 N @ 0.1163 Seconds, Ymax = 1004 N @ 0.0792 Seconds





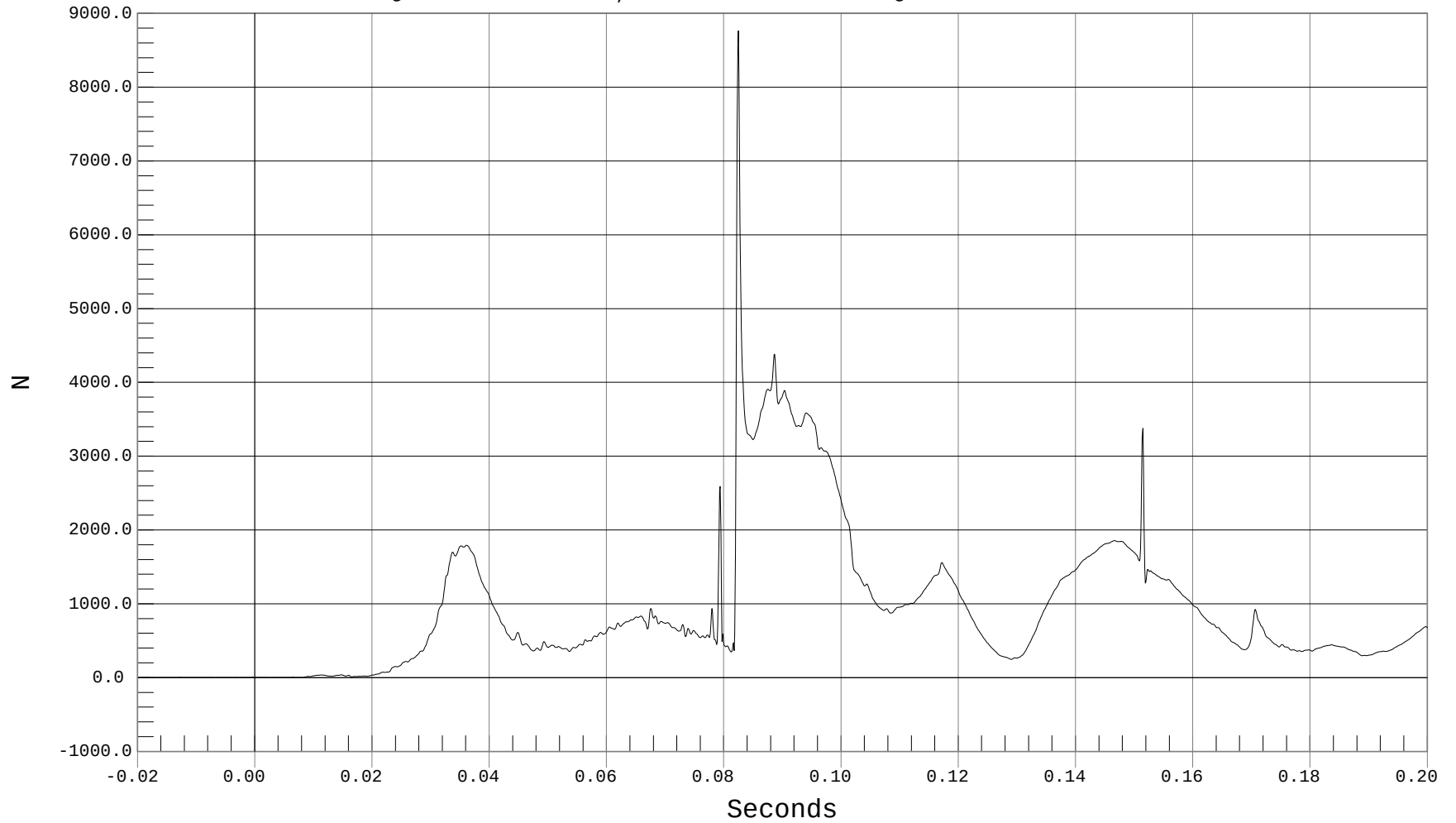
DRIVER LEFT FEMUR FORCE RESULTANT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR FORCE RESULTANT, B01110FV.F54

Ymin = .28 N @ -0.0027 Seconds, Ymax = 8764.96 N @ 0.0824 Seconds





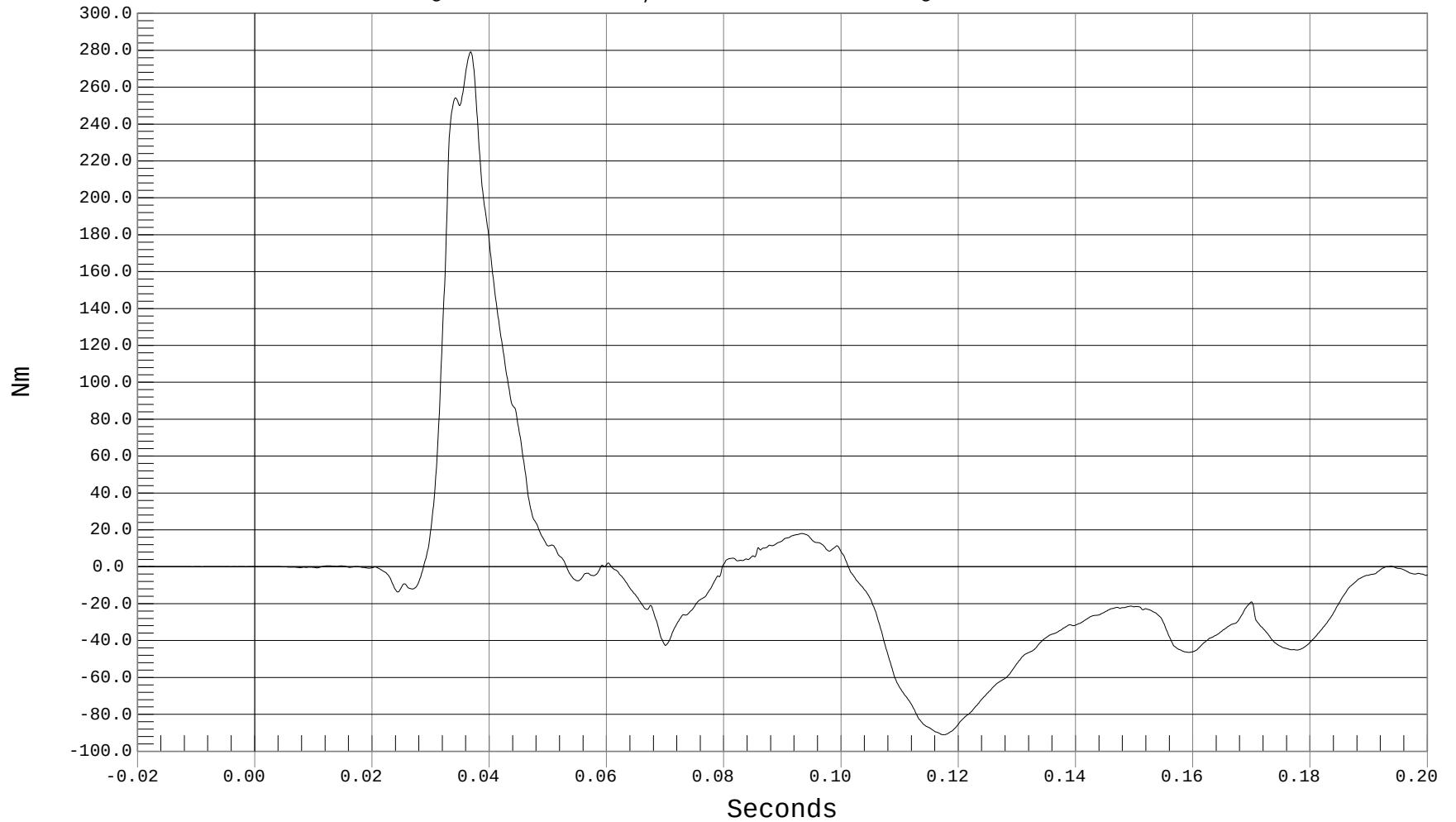
DRIVER LEFT FEMUR MOMENT X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR MOMENT X, B01110MF.M57

Ymin = -91.05 Nm @ 0.1174 Seconds, Ymax = 279.12 Nm @ 0.0367 Seconds





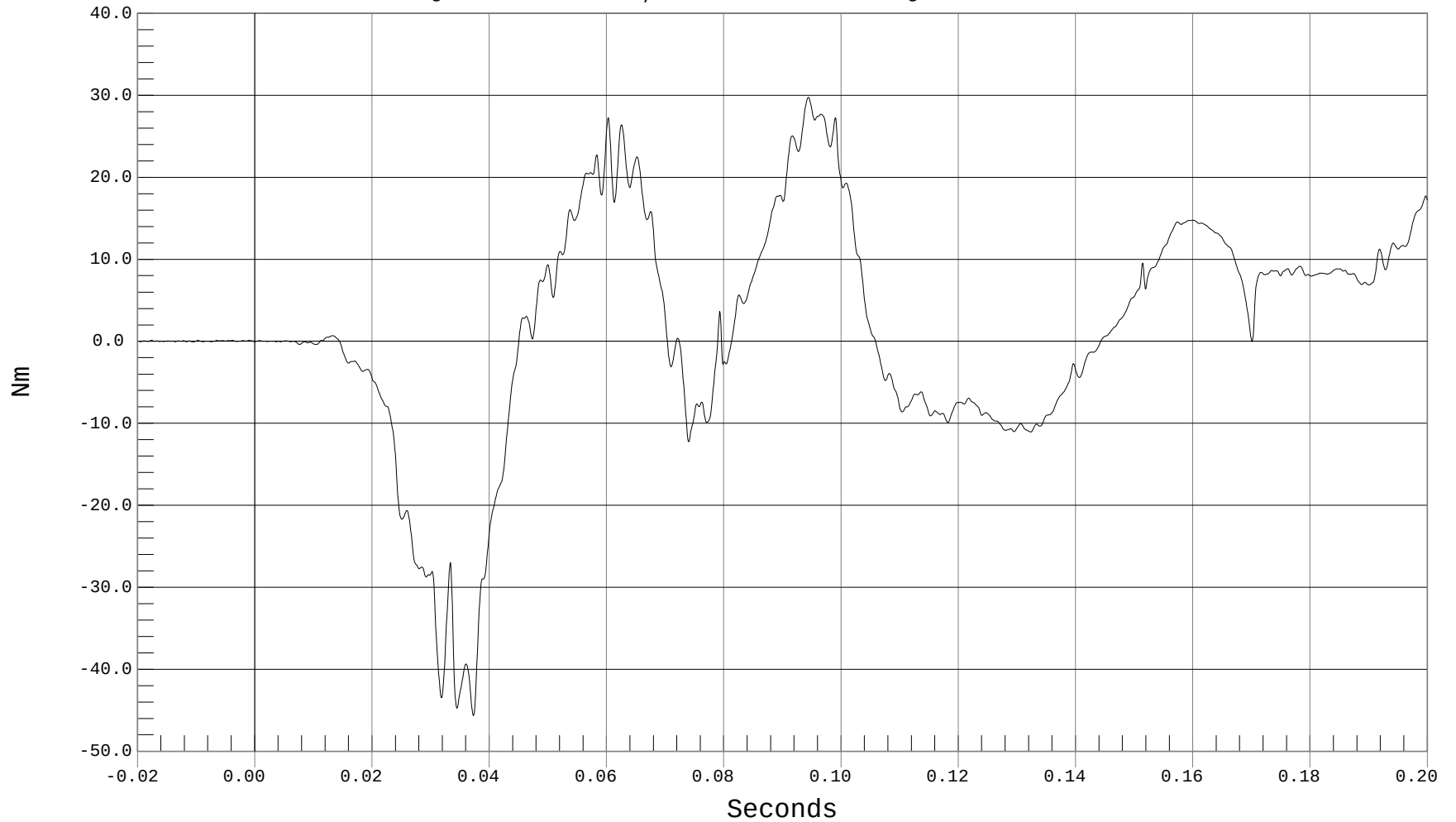
DRIVER LEFT FEMUR MOMENT Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR MOMENT Y, B01110MF.M58

Ymin = -45.65 Nm @ 0.0372 Seconds, Ymax = 29.75 Nm @ 0.0943 Seconds





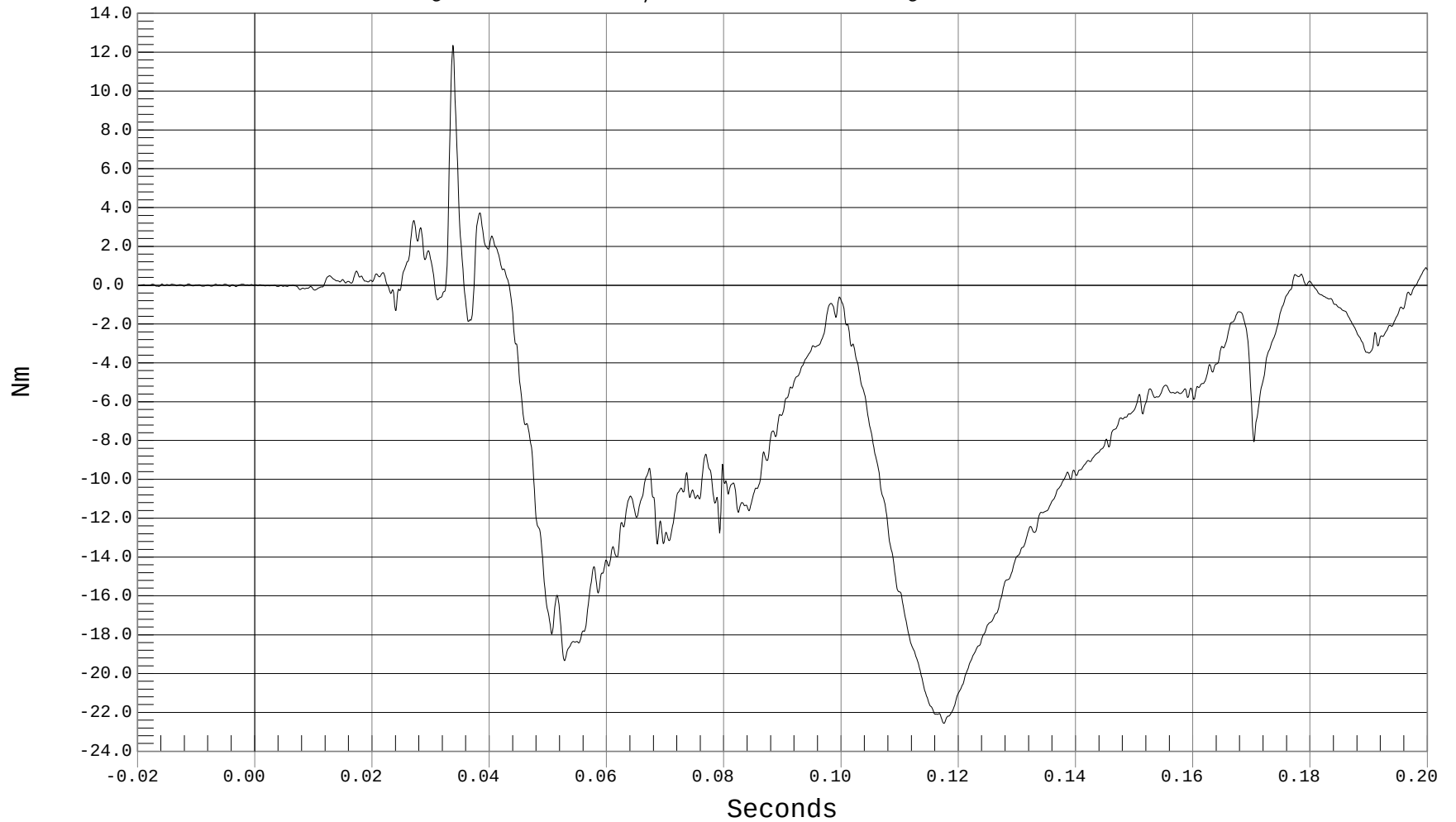
DRIVER LEFT FEMUR MOMENT Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR MOMENT Z, B01110MF.M59

Ymin = -22.56 Nm @ 0.1174 Seconds, Ymax = 12.36 Nm @ 0.0337 Seconds





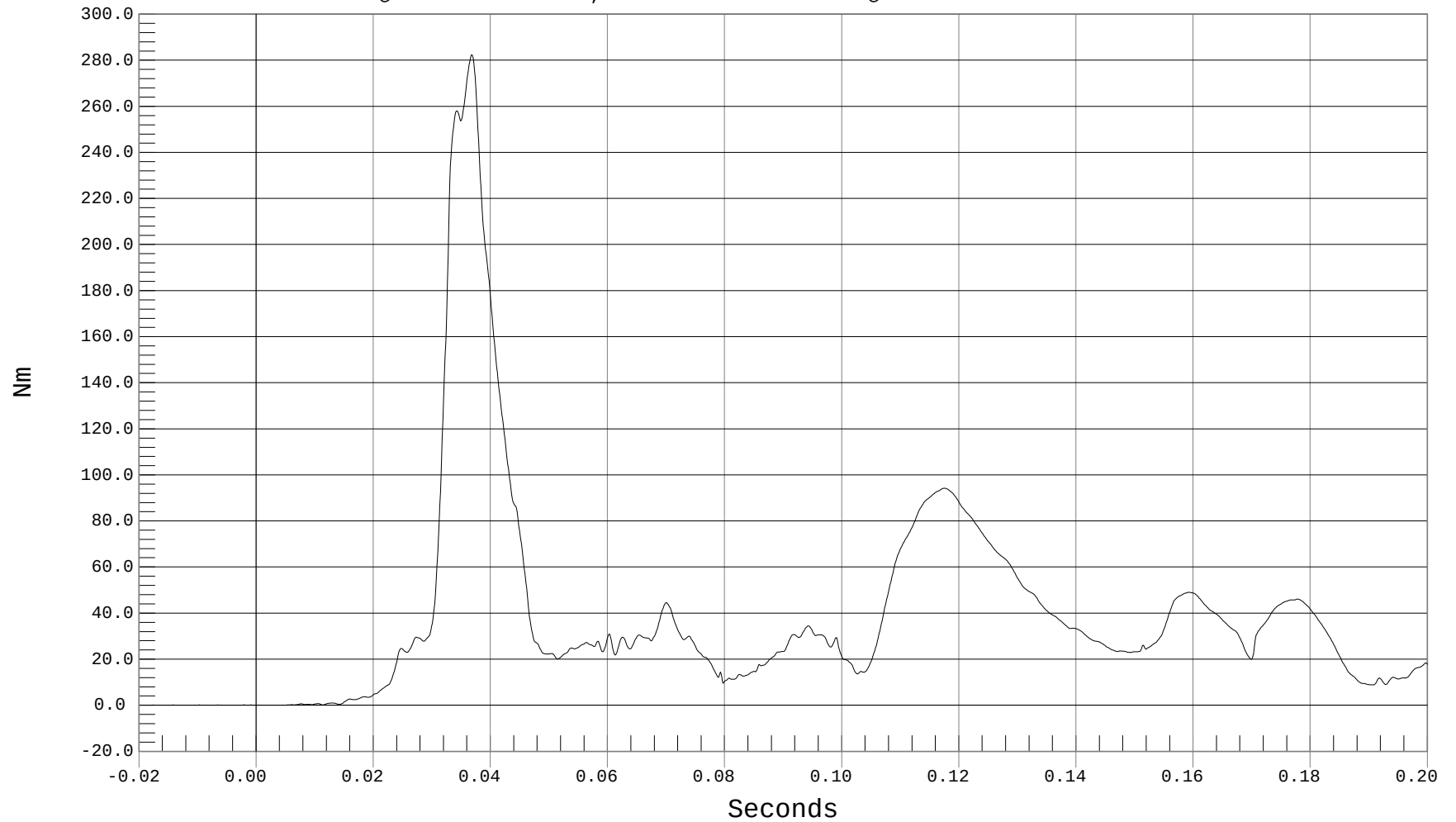
DRIVER LEFT FEMUR MOMENT RESULTANT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR MOMENT RESULTANT, B01110MV.M57

Ymin = 0 Nm @ 0.0012 Seconds, Ymax = 282.41 Nm @ 0.0368 Seconds





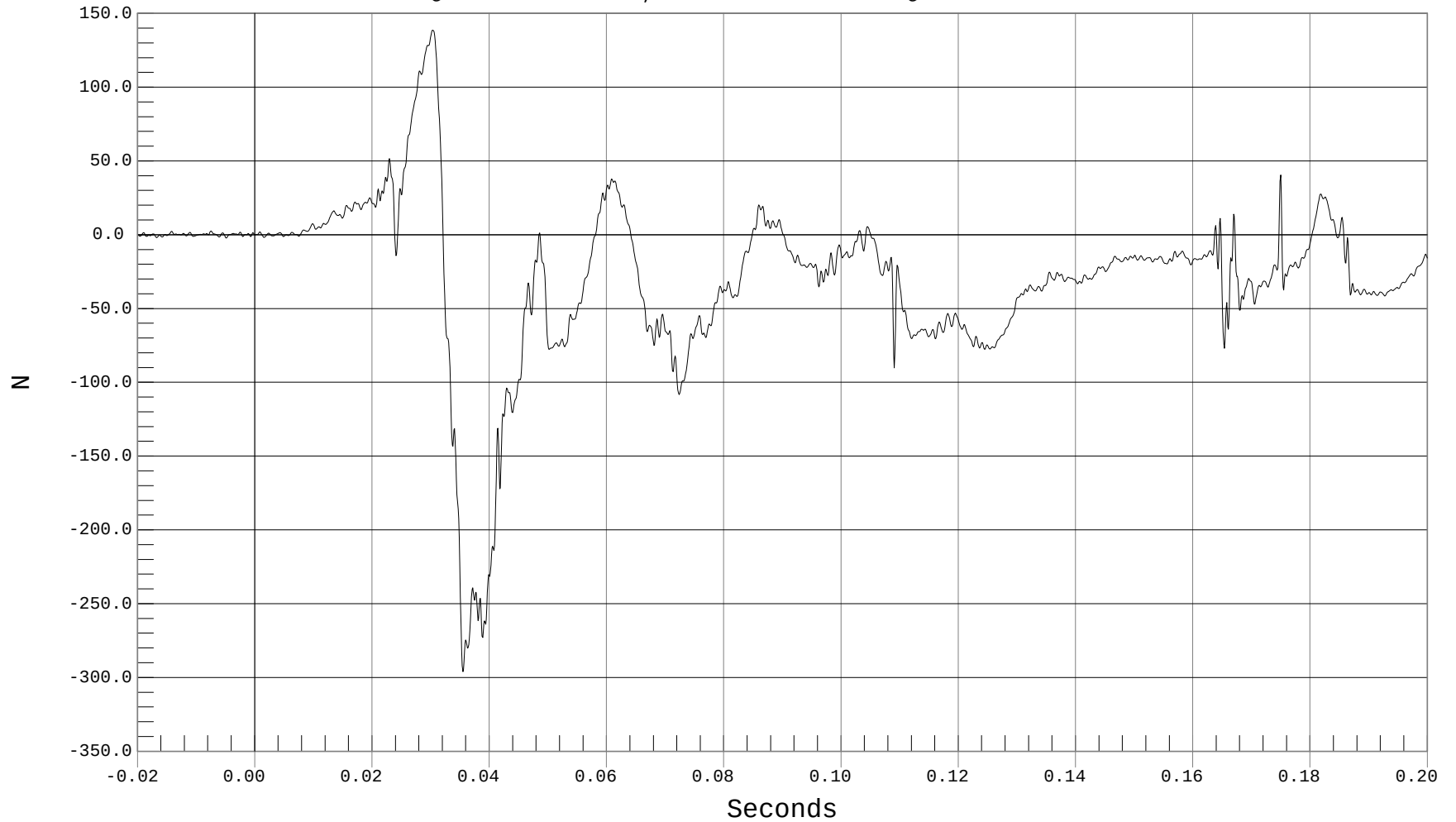
DRIVER RIGHT FEMUR FORCE X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR FORCE X, B01110FF.F48

Ymin = -296.11 N @ 0.0354 Seconds, Ymax = 138.62 N @ 0.0303 Seconds





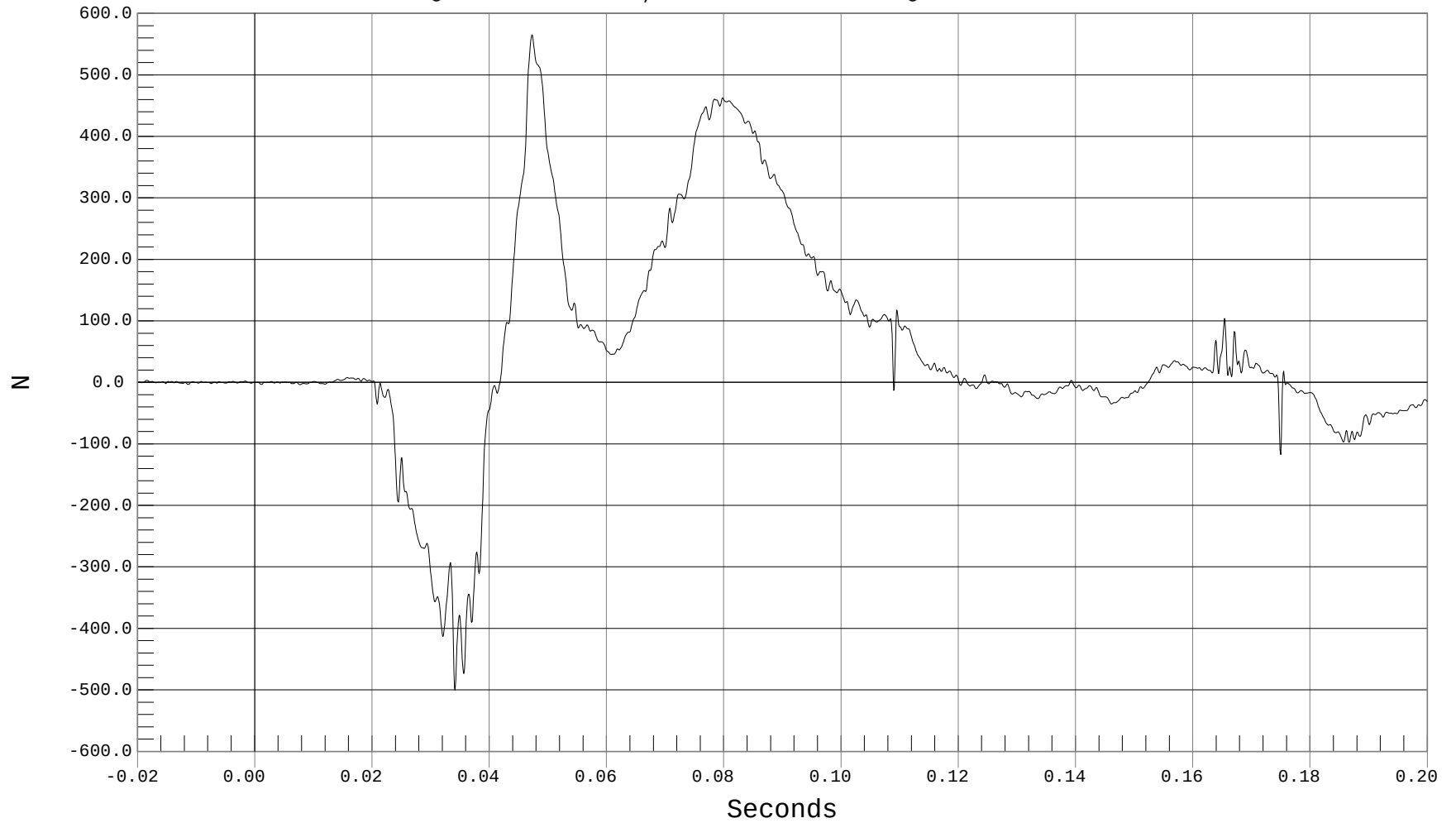
DRIVER RIGHT FEMUR FORCE Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR FORCE Y, B01110FF.F49

Ymin = -500.53 N @ 0.0341 Seconds, Ymax = 565.41 N @ 0.0472 Seconds





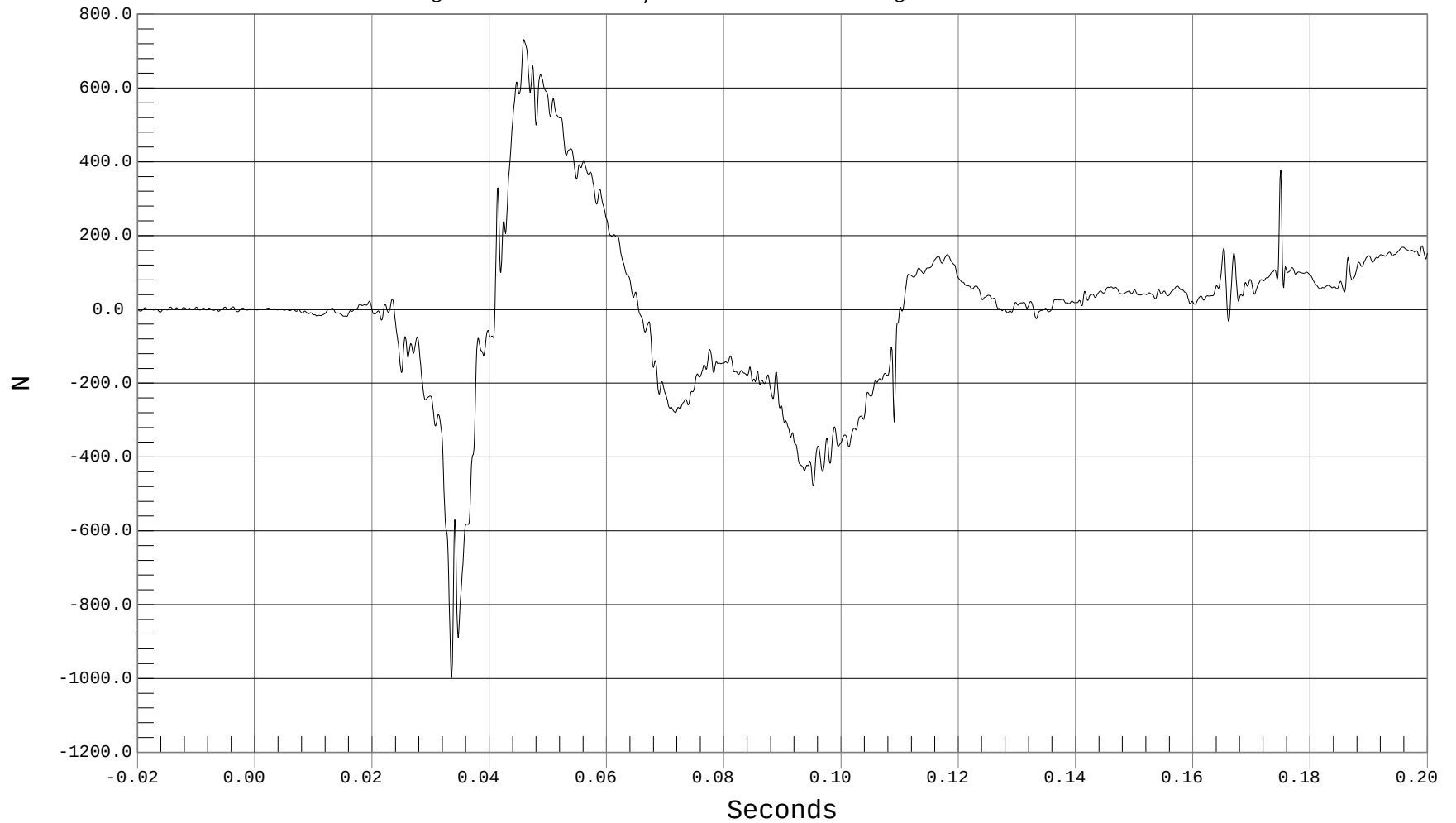
DRIVER RIGHT FEMUR FORCE Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR FORCE Z, B01110FF.F50

Ymin = -997.87 N @ 0.0335 Seconds, Ymax = 731.3 N @ 0.0458 Seconds





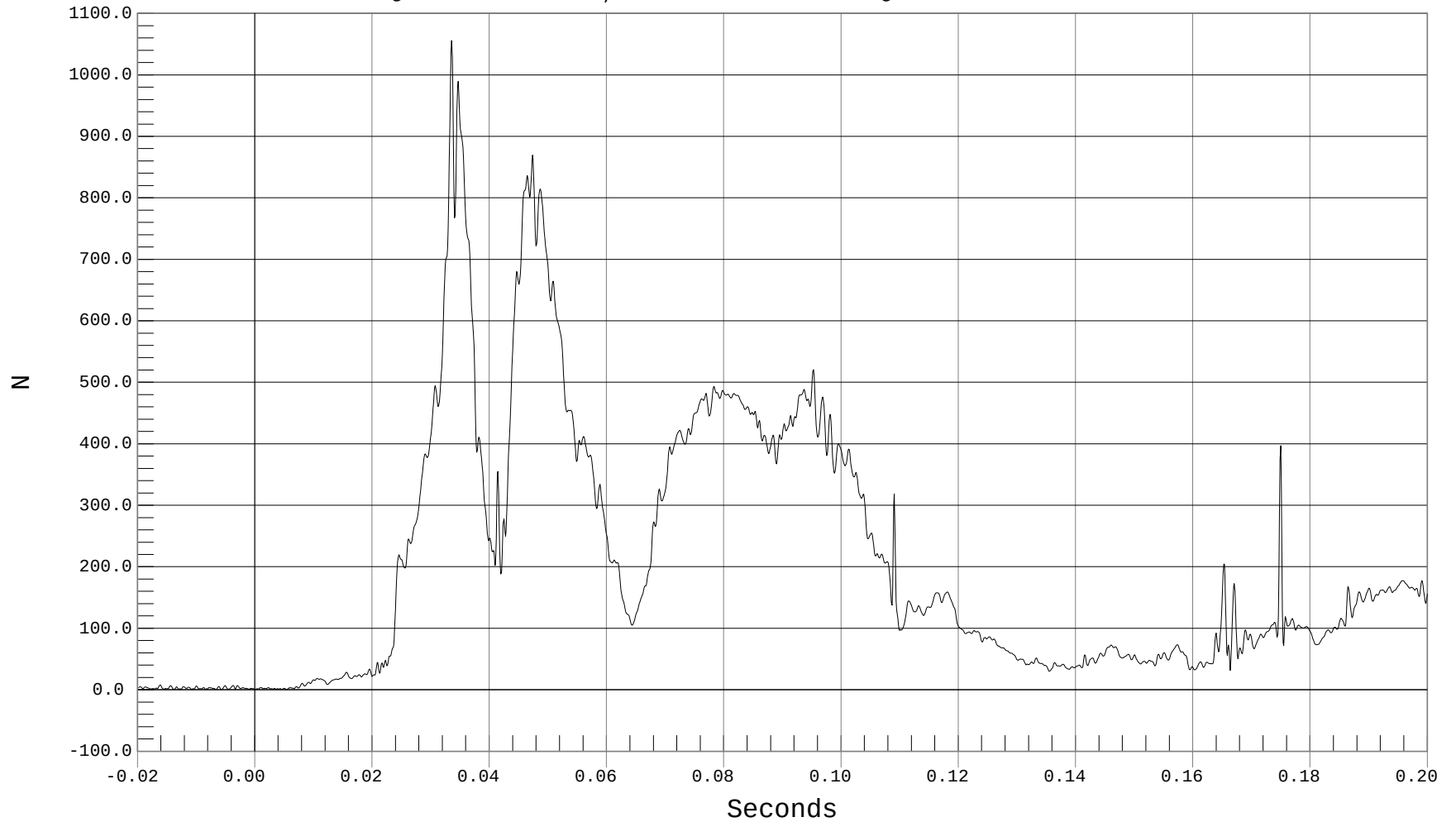
DRIVER RIGHT FEMUR FORCE RESULTANT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR FORCE RESULTANT, B01110FV.F48

Ymin = .28 N @ 0.0054 Seconds, Ymax = 1055.73 N @ 0.0335 Seconds





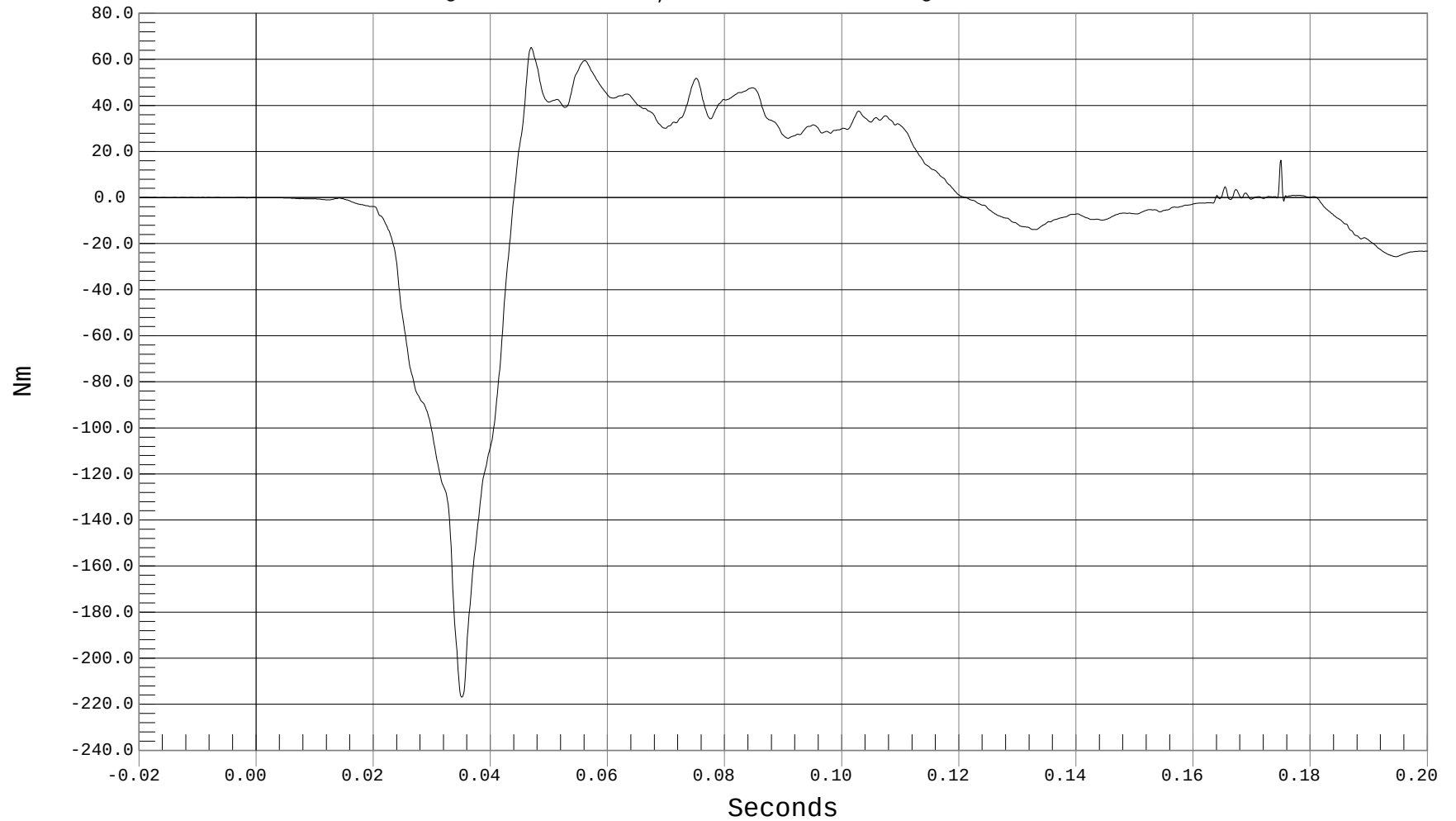
DRIVER RIGHT FEMUR MOMENT X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR MOMENT X, B01110MF.M51

Ymin = -216.89 Nm @ 0.0350 Seconds, Ymax = 65.18 Nm @ 0.0469 Seconds





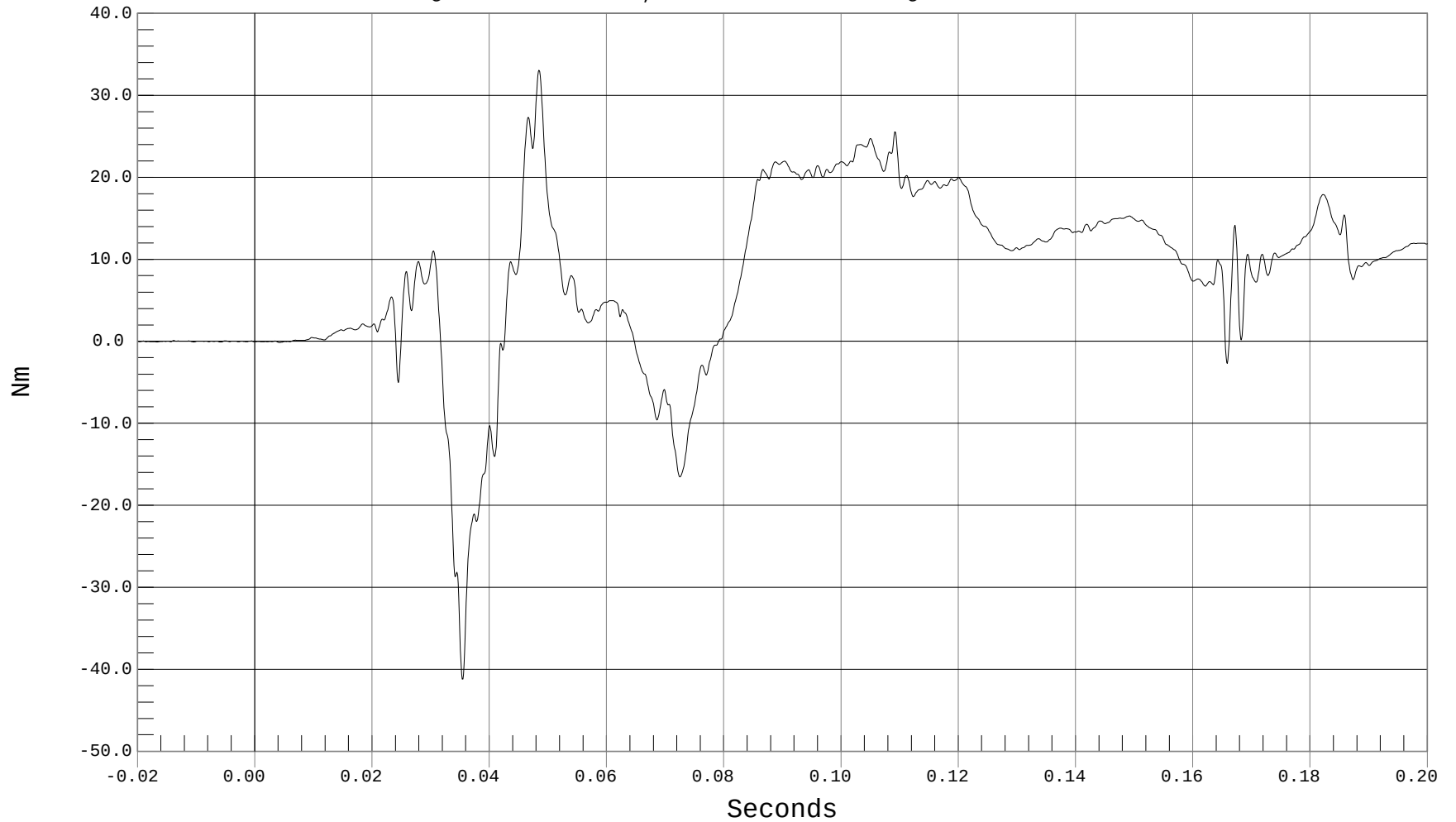
DRIVER RIGHT FEMUR MOMENT Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR MOMENT Y, B01110MF.M52

Ymin = -41.22 Nm @ 0.0354 Seconds, Ymax = 33.07 Nm @ 0.0484 Seconds



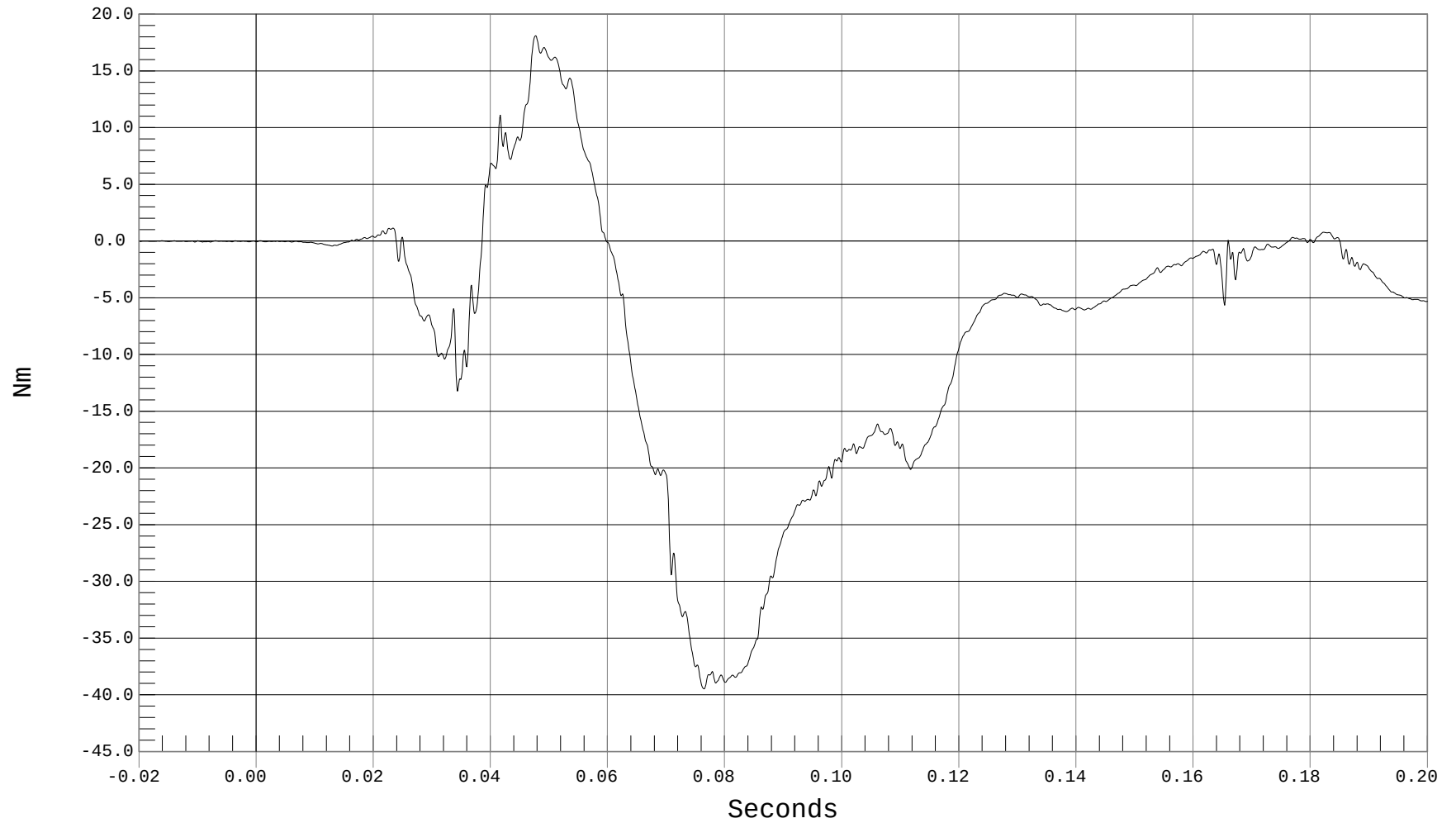


DRIVER RIGHT FEMUR MOMENT Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR MOMENT Z, B01110MF.M53





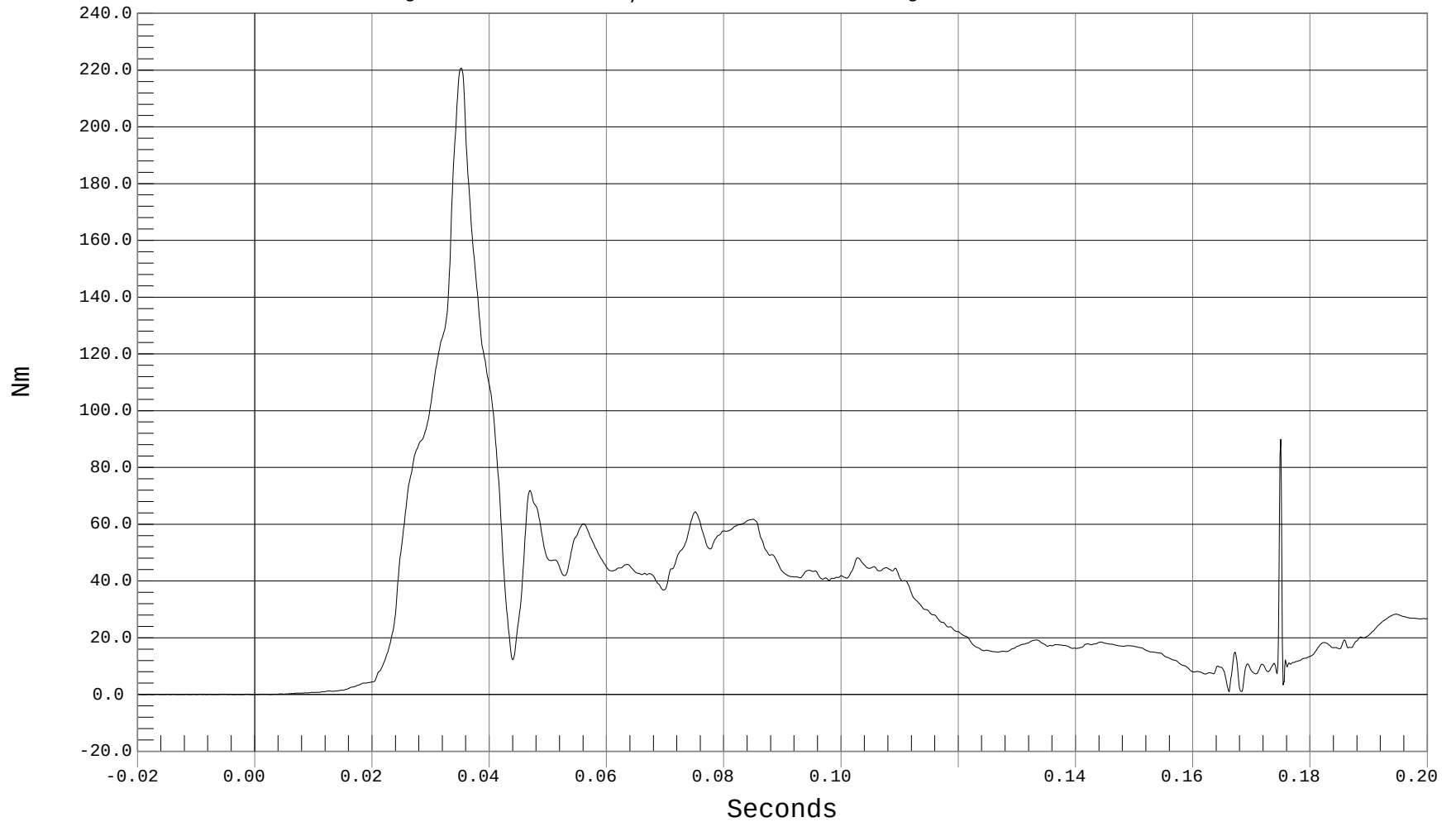
DRIVER RIGHT FEMUR MOMENT RESULTANT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR MOMENT RESULTANT, B01110MV.M51

Ymin = .01 Nm @ -0.0021 Seconds, Ymax = 220.73 Nm @ 0.0351 Seconds





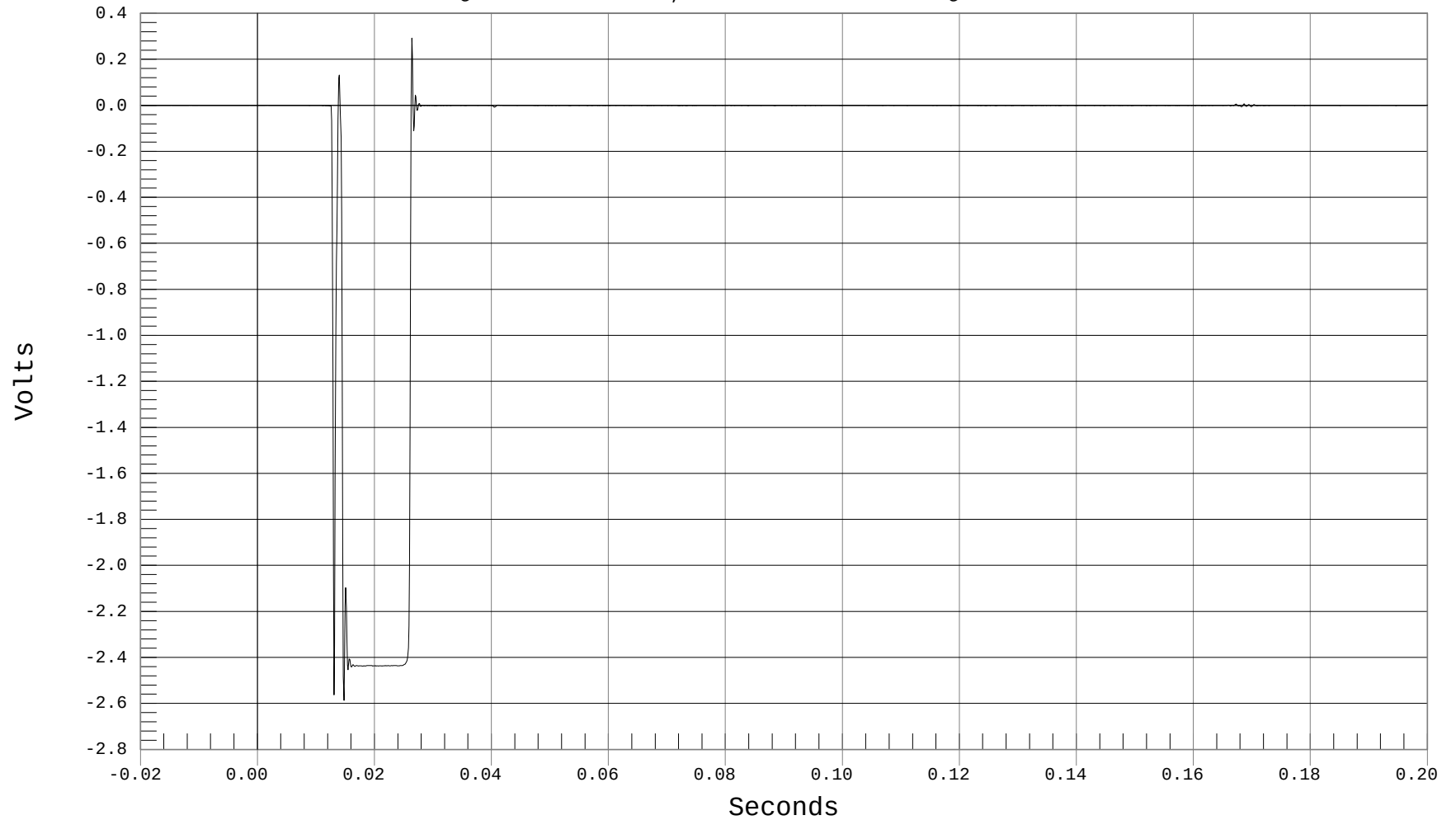
DRIVER ARM CONTACT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

1 DRIVER ARM CONTACT, B011100T.072

Ymin = -2.59 Volts @ 0.0147 Seconds, Ymax = .29 Volts @ 0.0263 Seconds





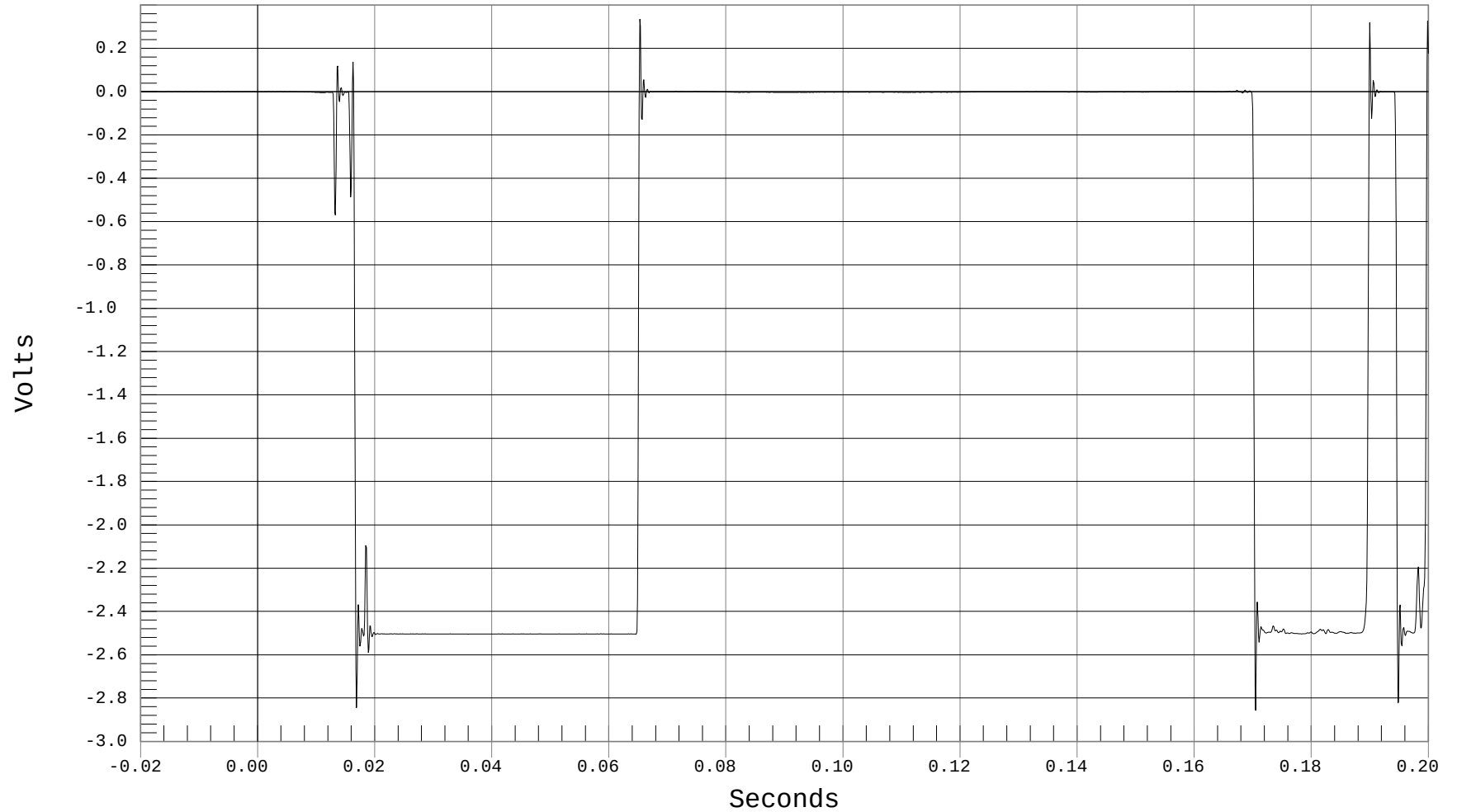
DRIVER RIB CONTACT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

1 DRIVER RIB CONTACT, B011100T.073

Ymin = -2.86 Volts @ 0.1704 Seconds, Ymax = .33 Volts @ 0.0652 Seconds



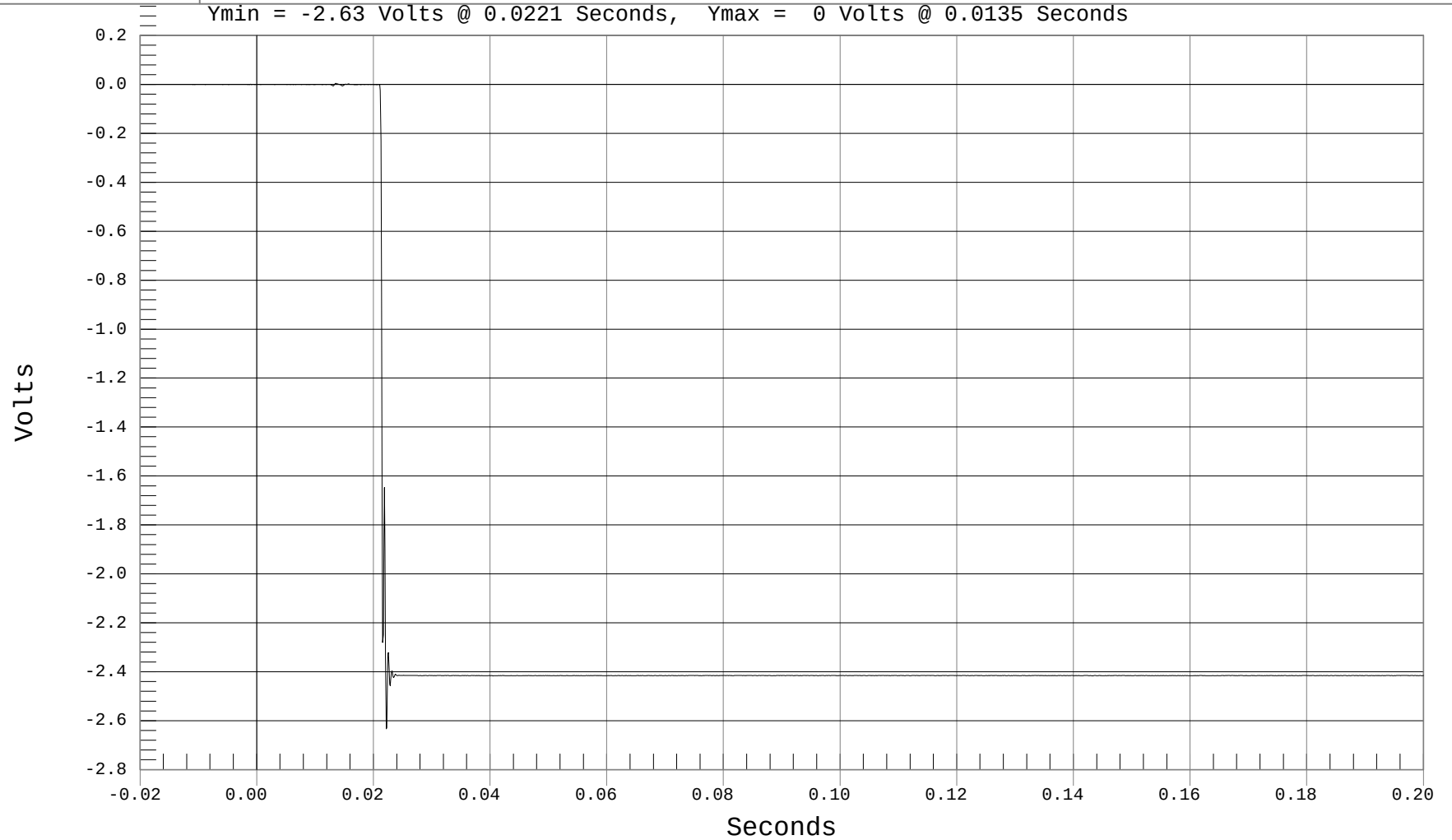


DRIVER PELVIS CONTACT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 DRIVER PELVIS CONTACT, B011100T.074





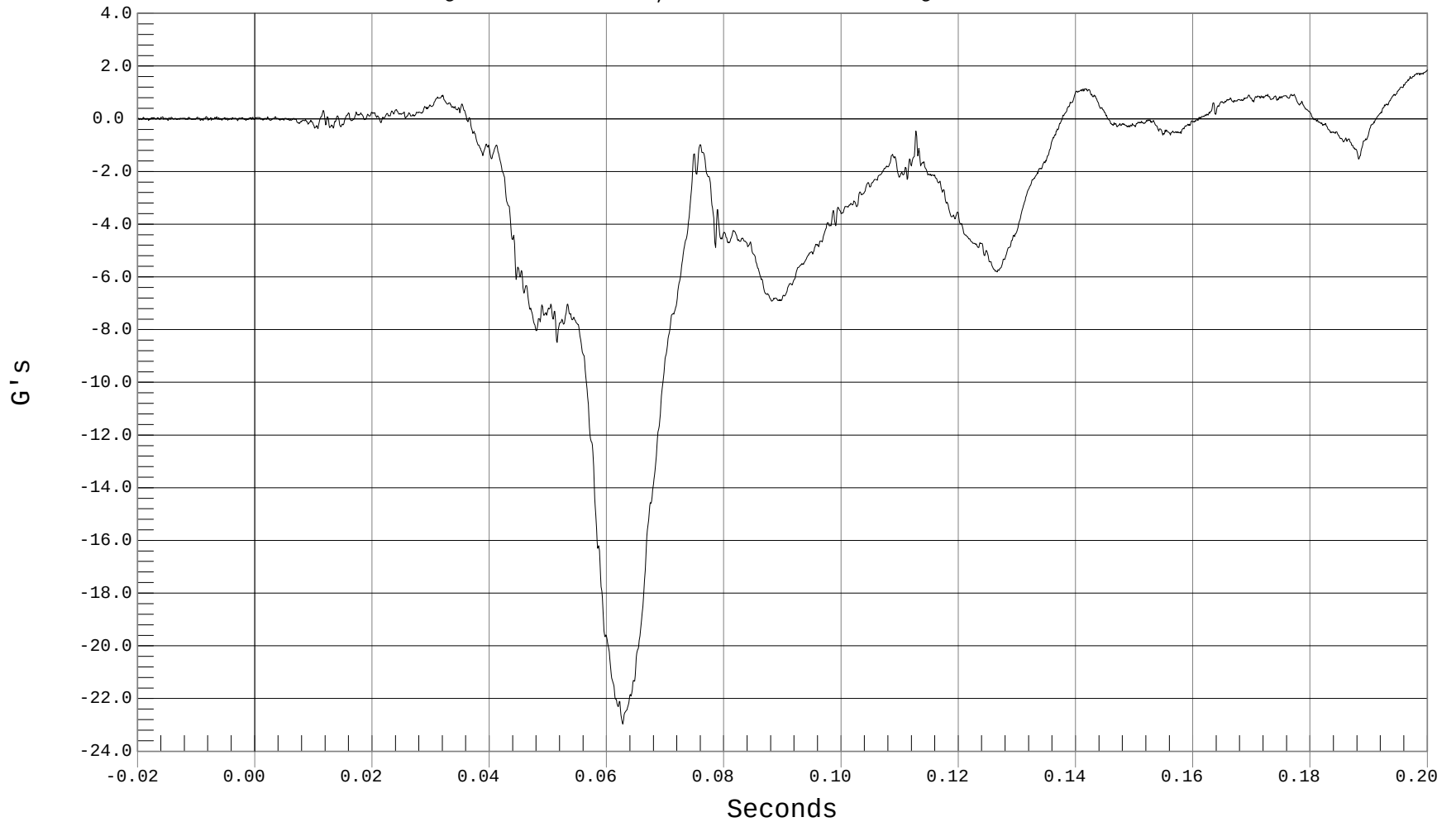
PASSENGER HEAD CG X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER HEAD CG X, B01110AT.A60

Ymin = -22.96 G's @ 0.0627 Seconds, Ymax = 1.88 G's @ 0.2000 Seconds





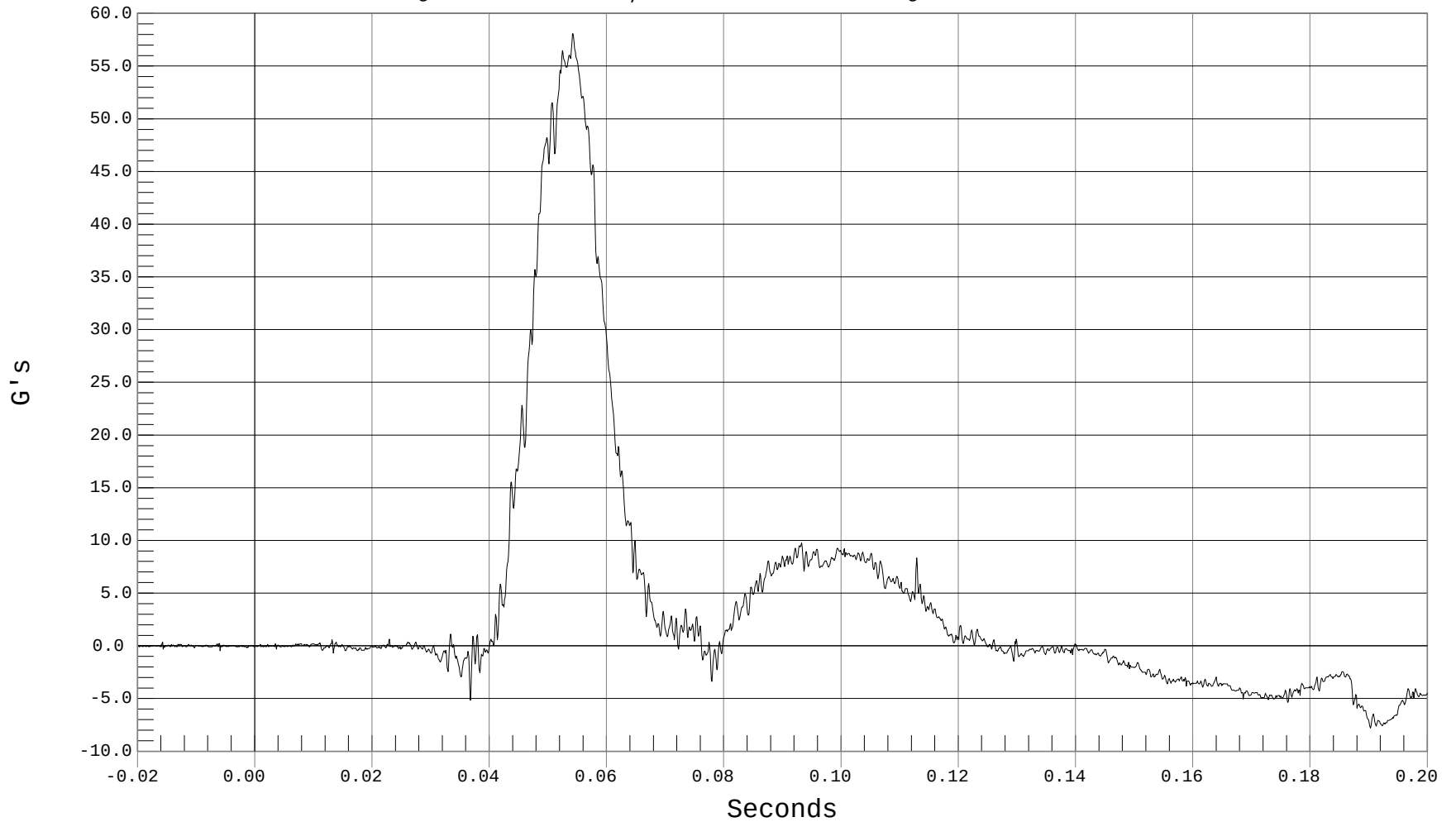
PASSENGER HEAD CG Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER HEAD CG Y, B01110AT.A61

Ymin = -7.8 G's @ 0.1902 Seconds, Ymax = 58.07 G's @ 0.0541 Seconds





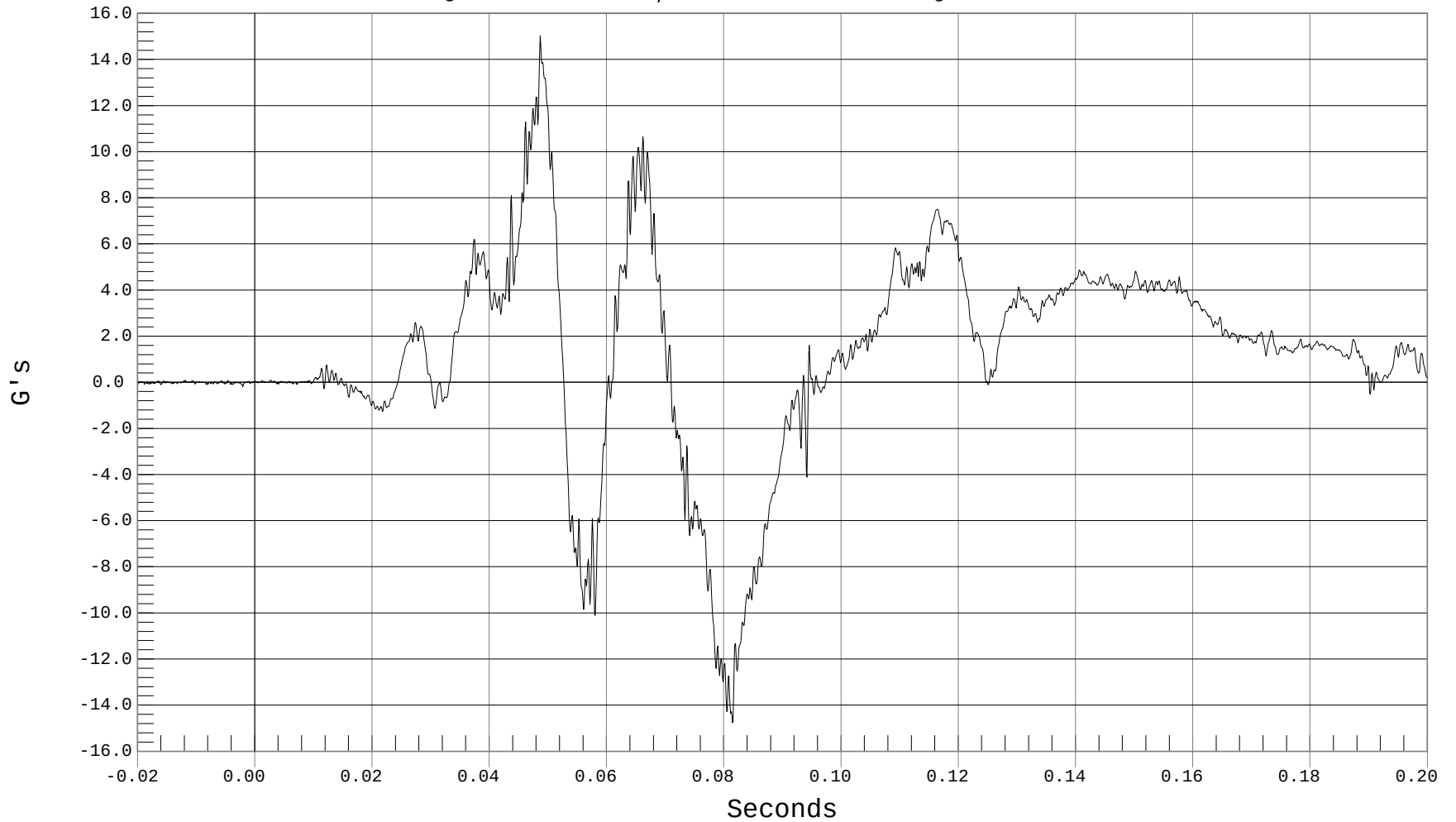
PASSENGER HEAD CG Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER HEAD CG Z, B01110AT.A62

Ymin = -14.76 G's @ 0.0814 Seconds, Ymax = 15.03 G's @ 0.0486 Seconds





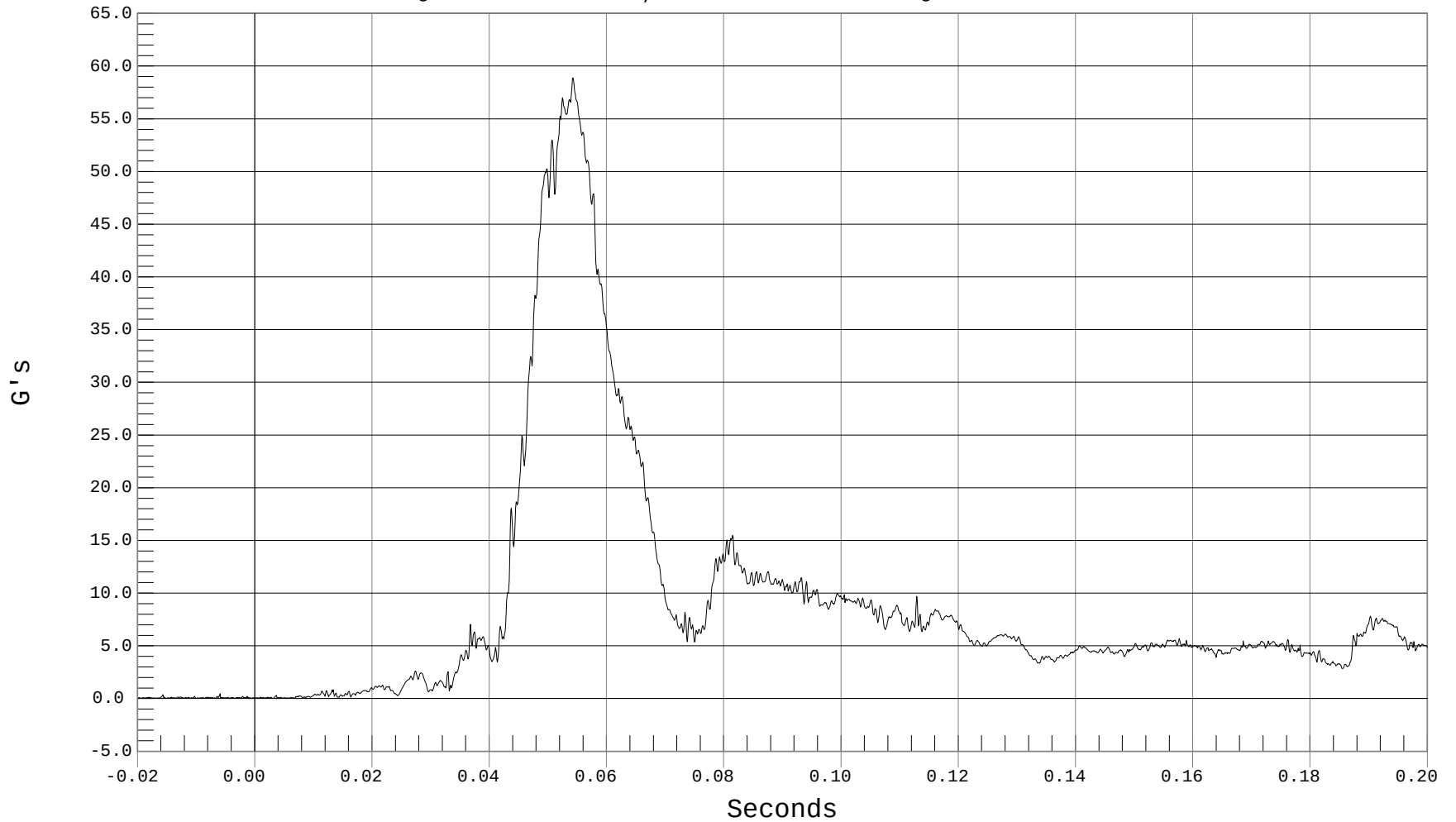
PASSENGER HEAD CG RESULTANT ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 PASSENGER HEAD RESULTANT, B01110AV.A60

Ymin = .02 G's @ -0.0070 Seconds, Ymax = 58.89 G's @ 0.0542 Seconds





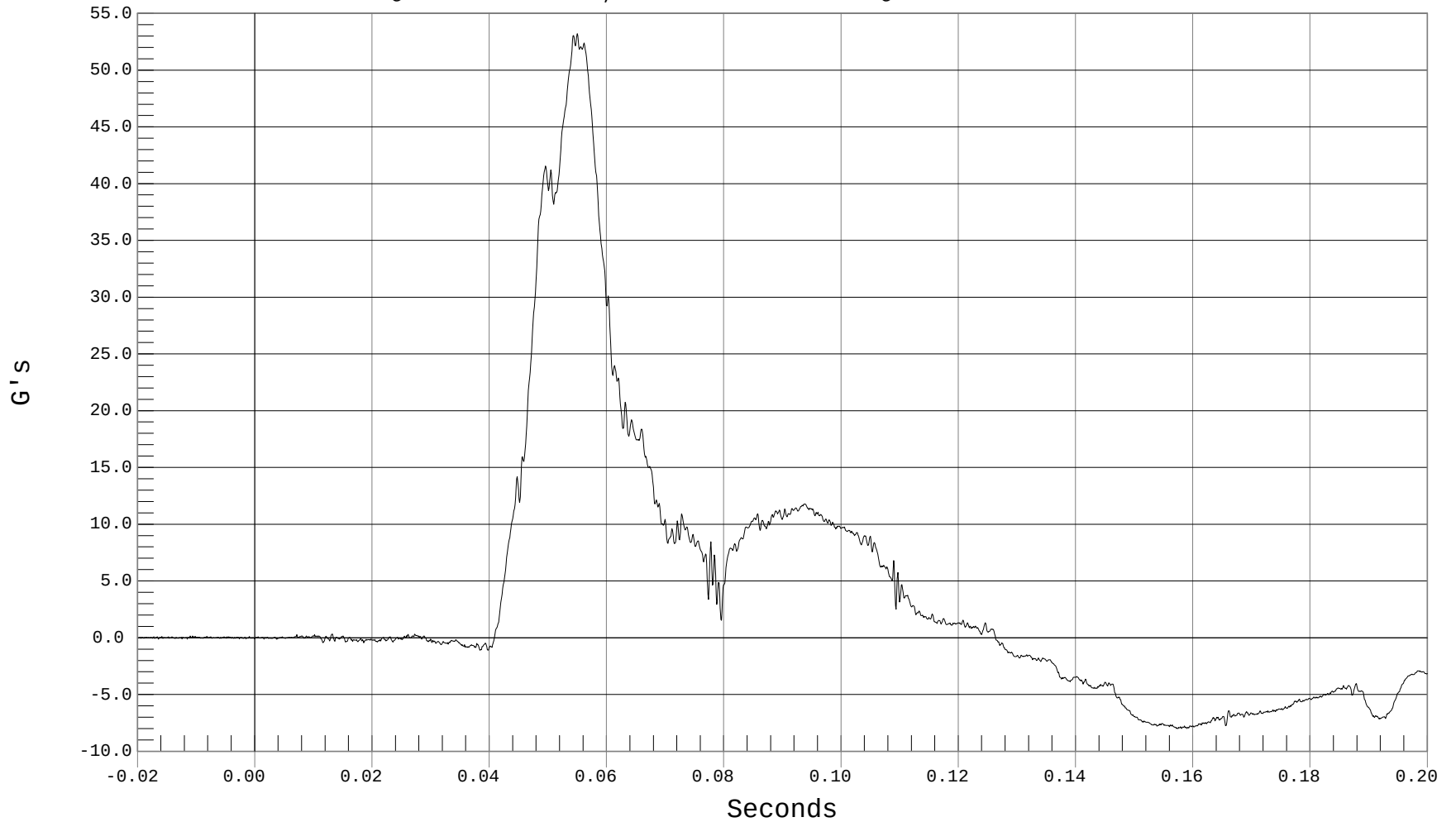
PASSENGER HEAD FRONT Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER HEAD FRONT Y, B01110AT.A65

Ymin = -8 G's @ 0.1571 Seconds, Ymax = 53.22 G's @ 0.0549 Seconds





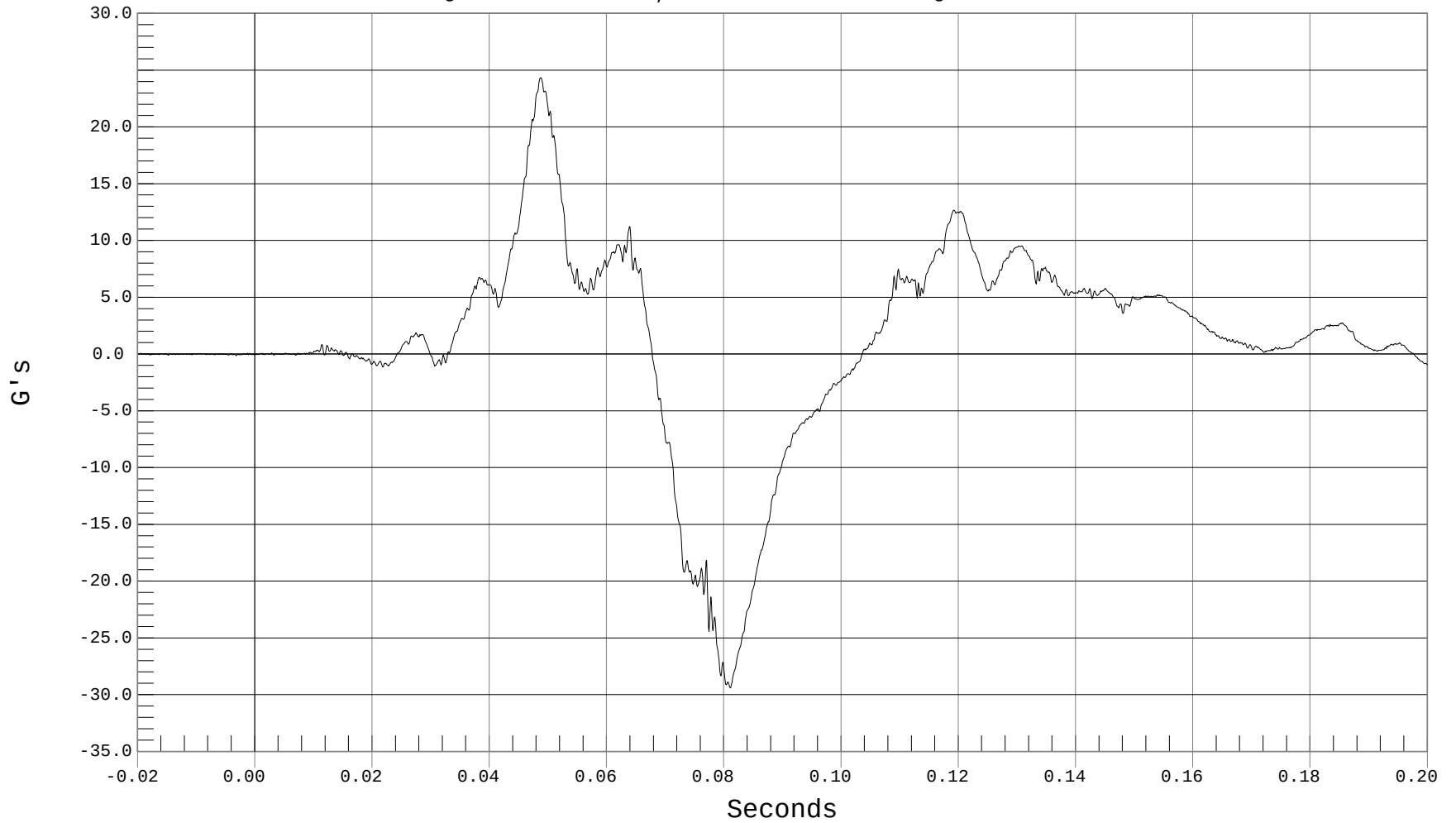
PASSENGER HEAD FRONT Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER HEAD FRONT Z, B01110AT.A66

Ymin = -29.42 G's @ 0.0810 Seconds, Ymax = 24.34 G's @ 0.0487 Seconds





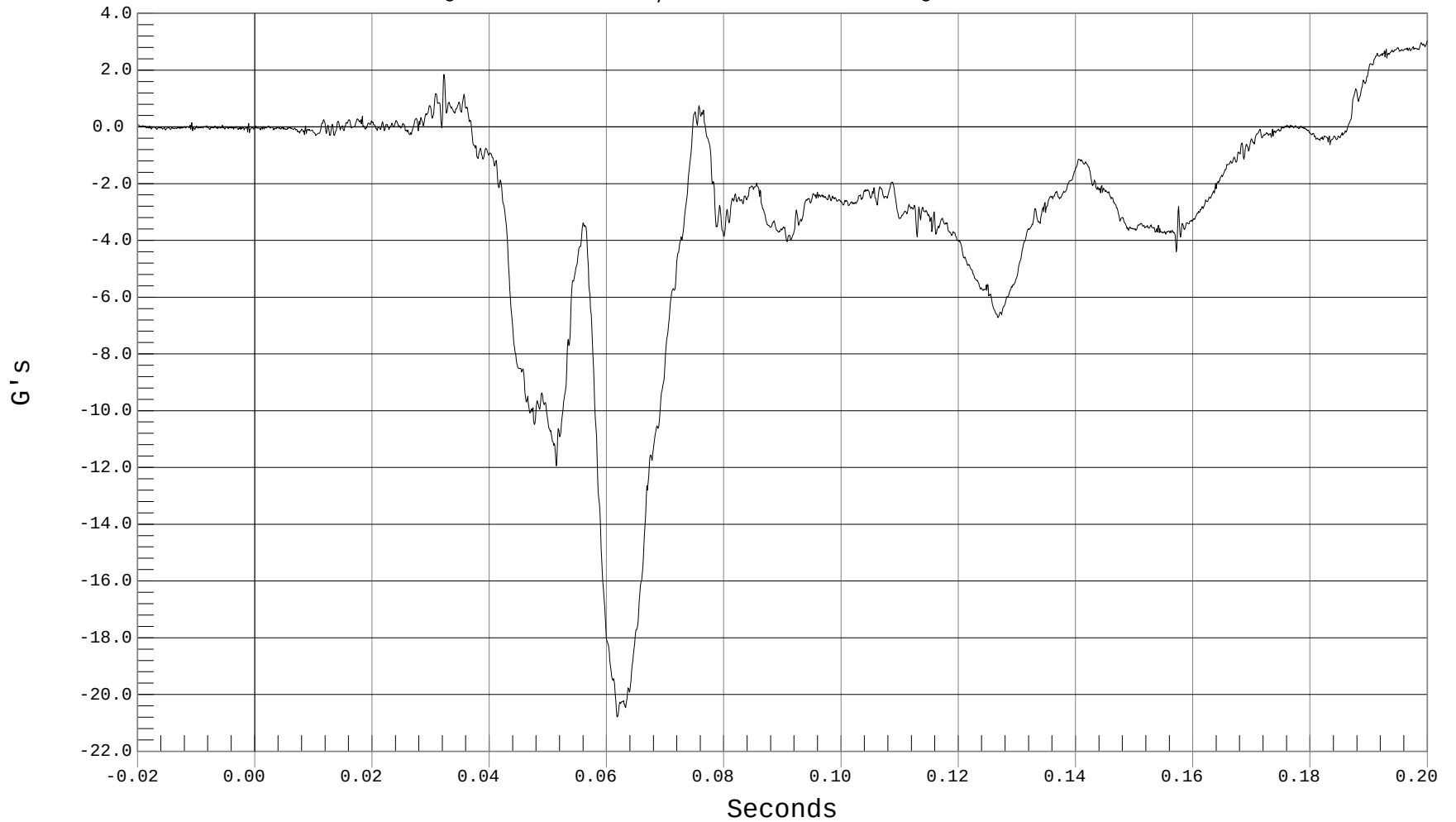
PASSENGER HEAD LEFT X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER HEAD LEFT X, B01110AT.A67

Ymin = -20.79 G's @ 0.0617 Seconds, Ymax = 3.03 G's @ 0.1999 Seconds





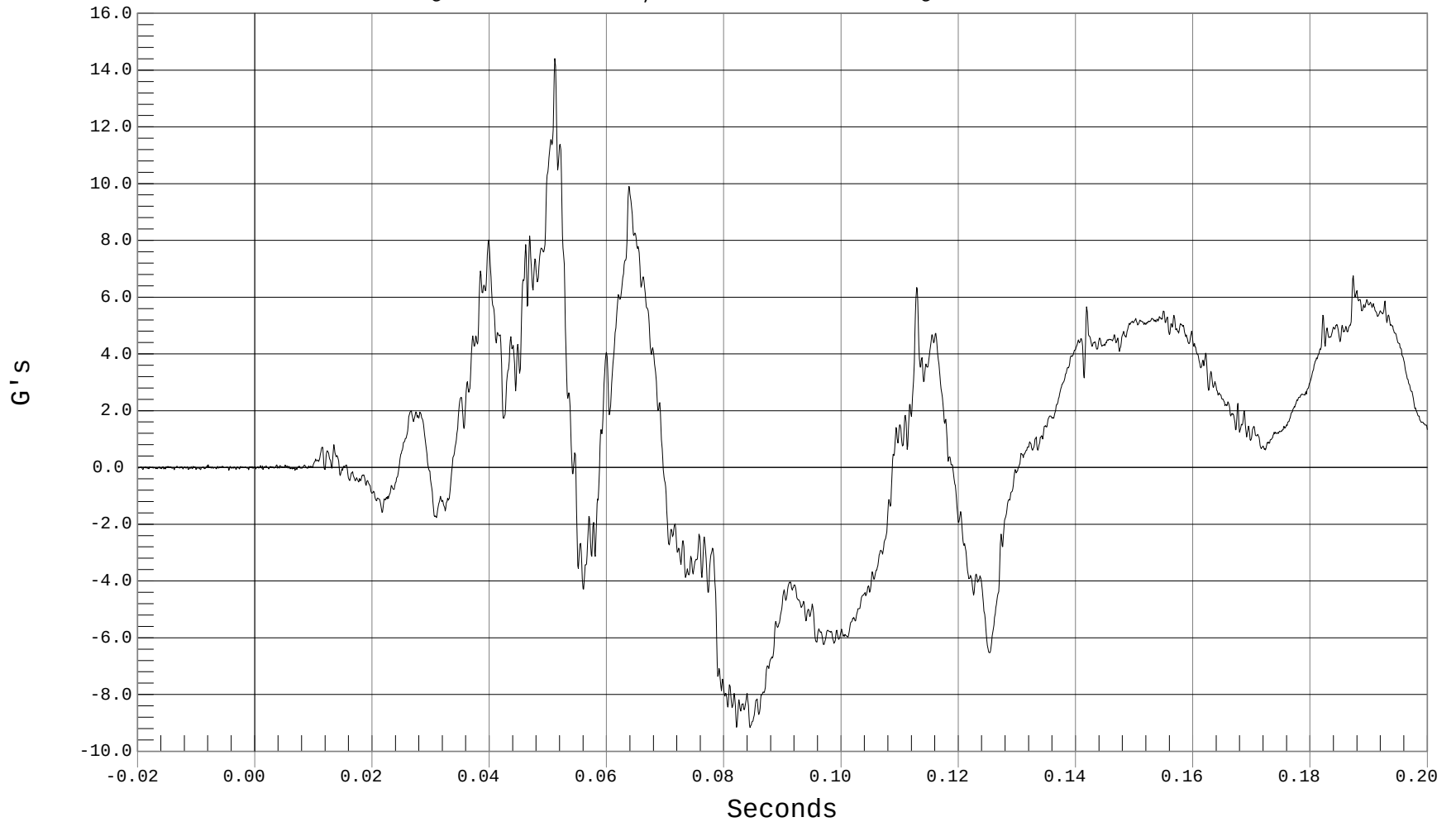
PASSENGER HEAD LEFT Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER HEAD LEFT Z, B01110AT.A68

Ymin = -9.17 G's @ 0.0844 Seconds, Ymax = 14.41 G's @ 0.0511 Seconds





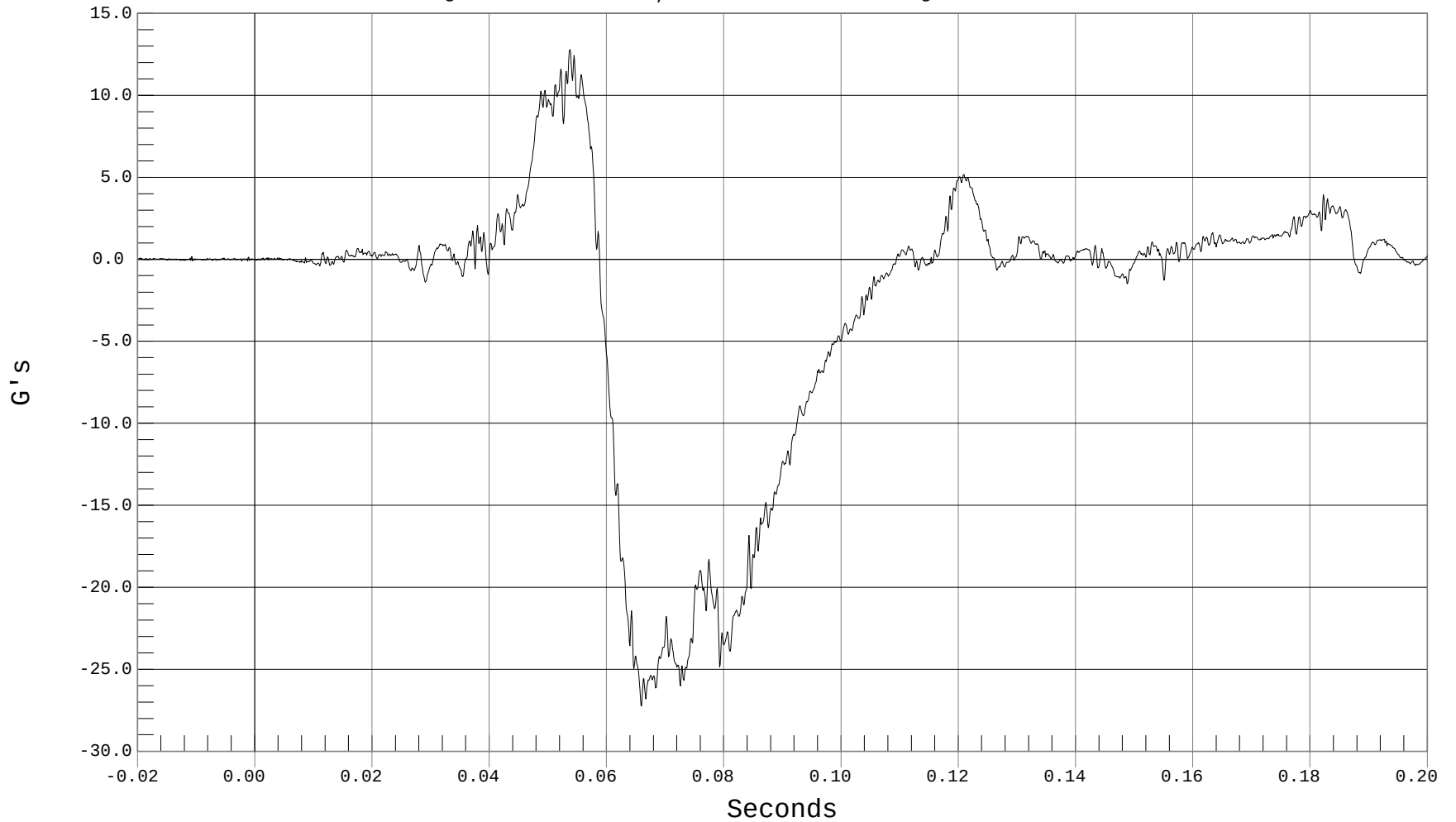
PASSENGER HEAD TOP X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER HEAD TOP X, B01110AT.A69

Ymin = -27.25 G's @ 0.0659 Seconds, Ymax = 12.8 G's @ 0.0537 Seconds





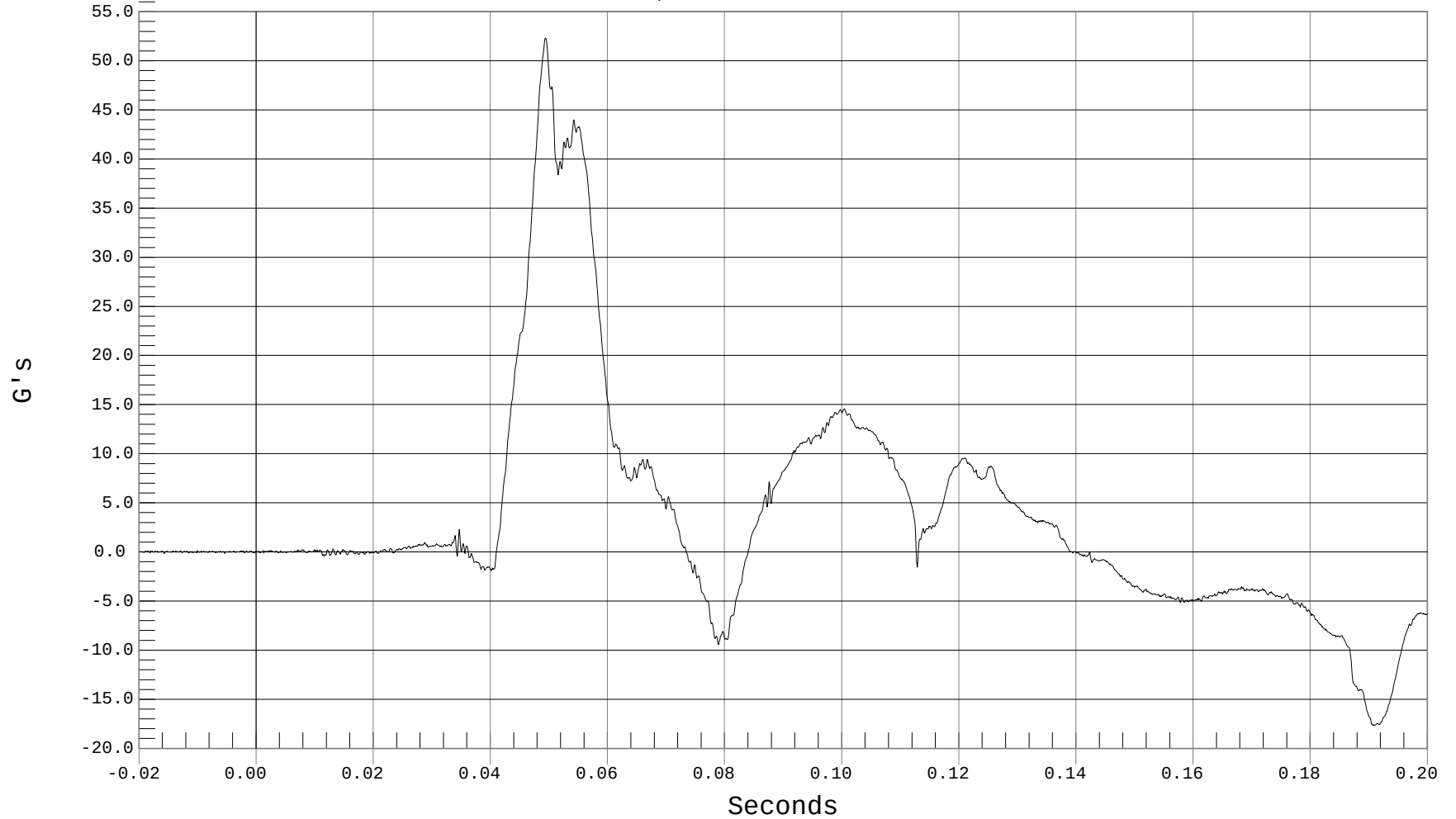
PASSENGER HEAD TOP Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER HEAD TOP Y, B01110AT.A70

Ymin = -17.67 G's @ 0.1906 Seconds, Ymax = 52.31 G's @ 0.0493 Seconds





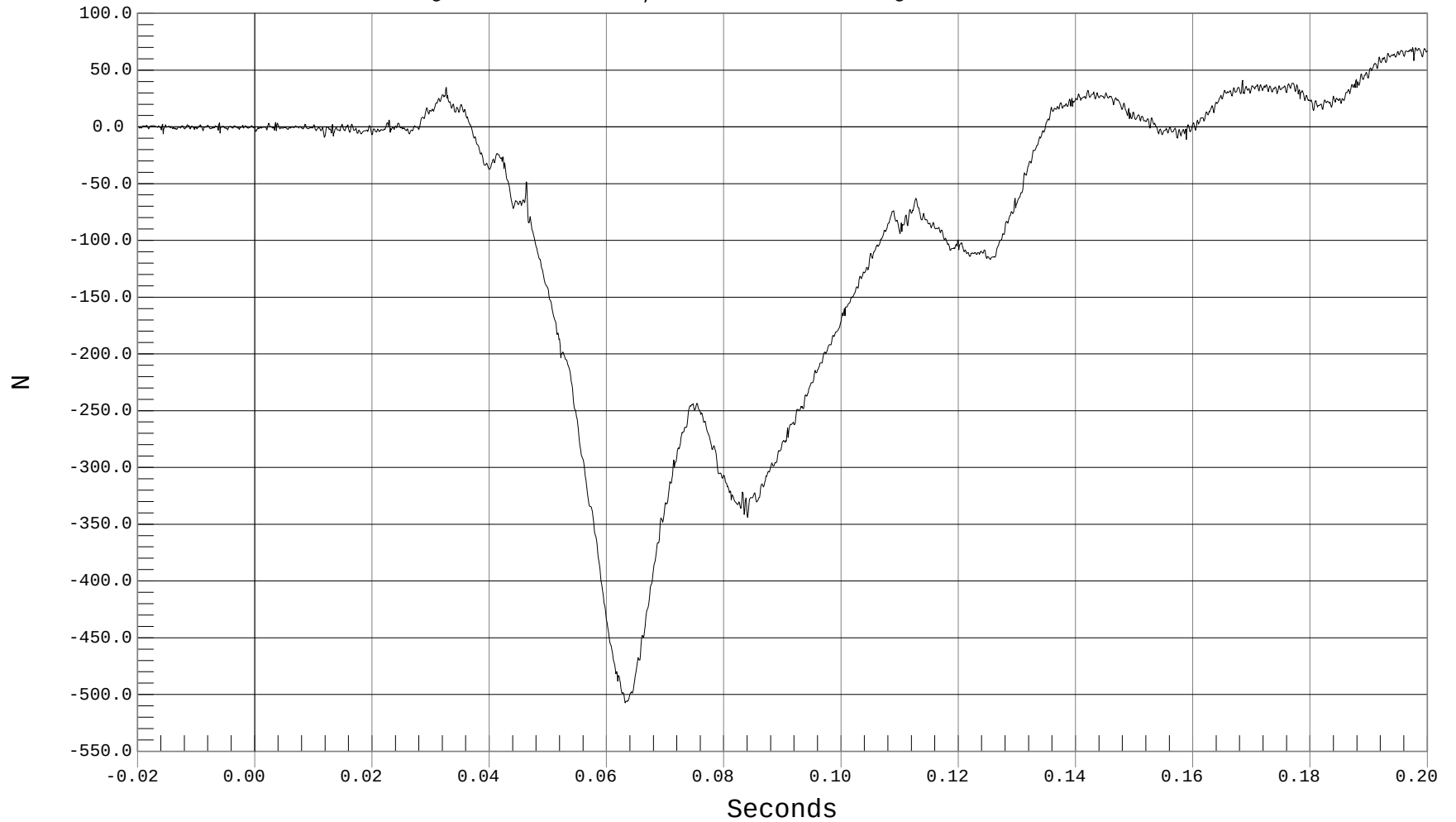
PASSENGER UPPER NECK FORCE X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER UPPER NECK FORCE X, B01110FT.F63

Ymin = -507.52 N @ 0.0631 Seconds, Ymax = 70.09 N @ 0.1974 Seconds





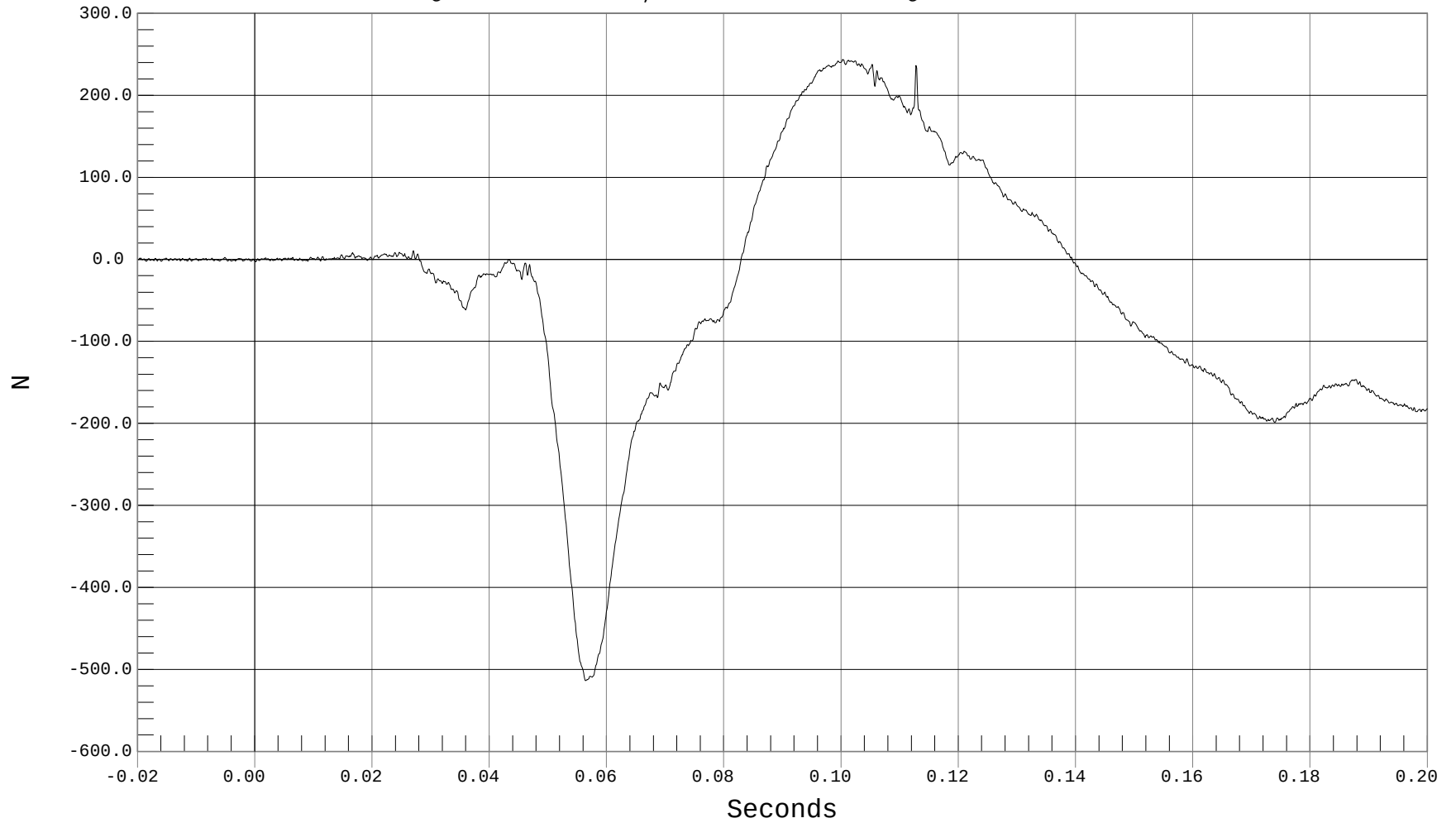
PASSENGER UPPER NECK FORCE Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER UPPER NECK FORCE Y, B01110FT.F65

Ymin = -513.48 N @ 0.0563 Seconds, Ymax = 243.92 N @ 0.1002 Seconds





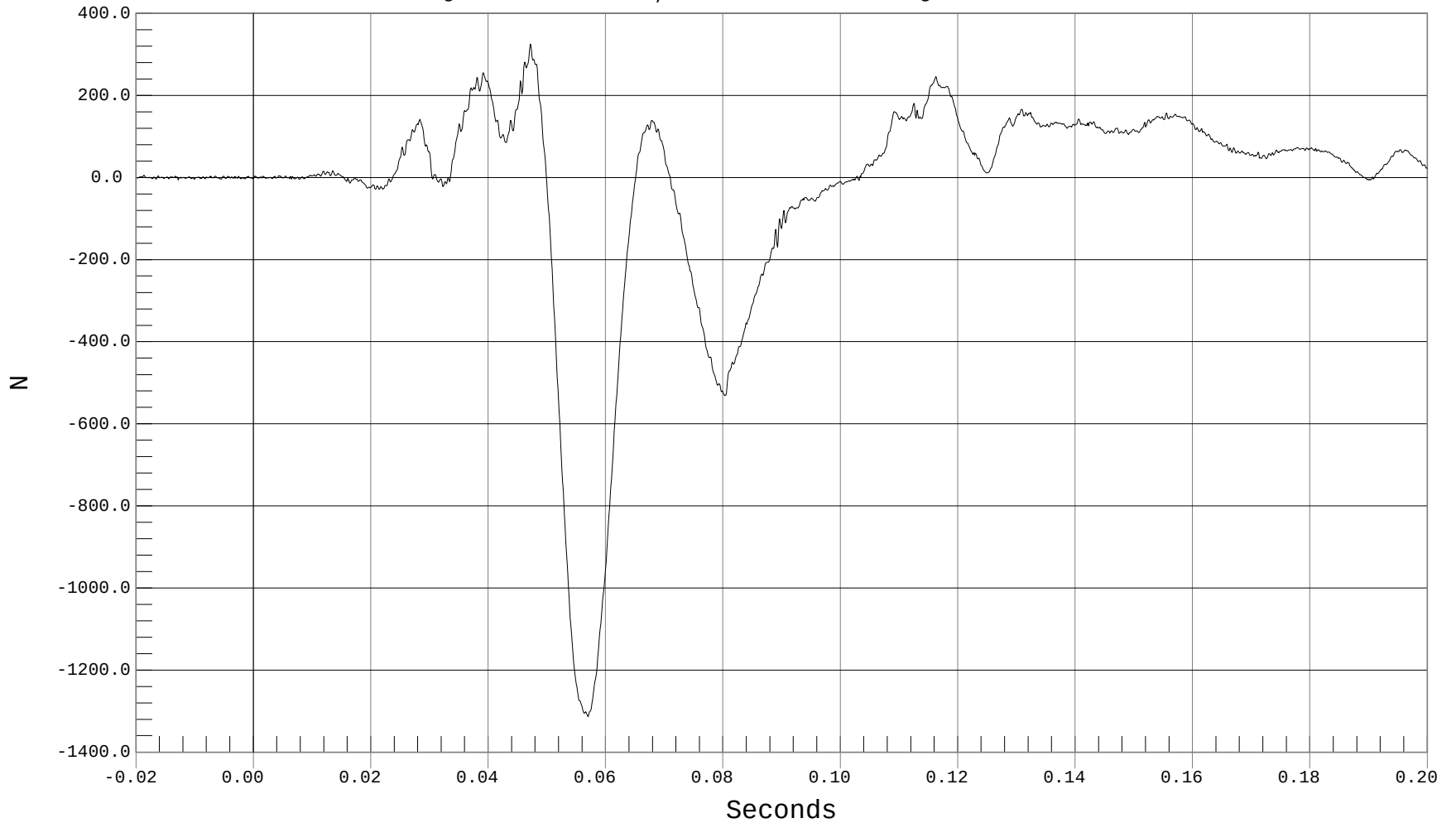
PASSENGER UPPER NECK FORCE Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER UPPER NECK FORCE Z, B01110FT.F66

Ymin = -1314.01 N @ 0.0569 Seconds, Ymax = 324.93 N @ 0.0471 Seconds





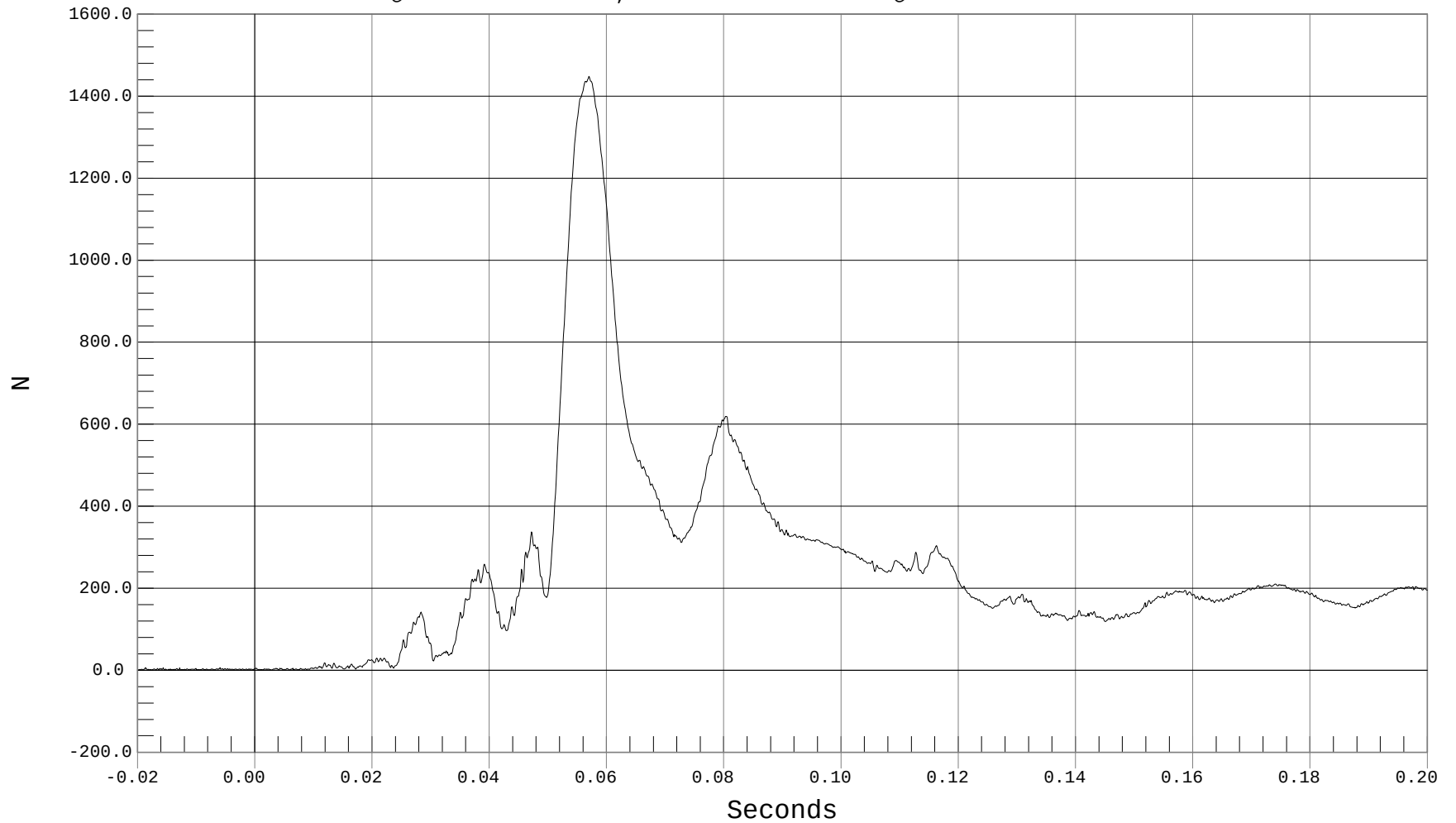
PASSENGER UPPER NECK FORCE RESULTANT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 PASSENGER UPPER NECK FORCE RESULTANT, B01110FV.F63

Ymin = .35 N @ -0.0176 Seconds, Ymax = 1448.54 N @ 0.0569 Seconds





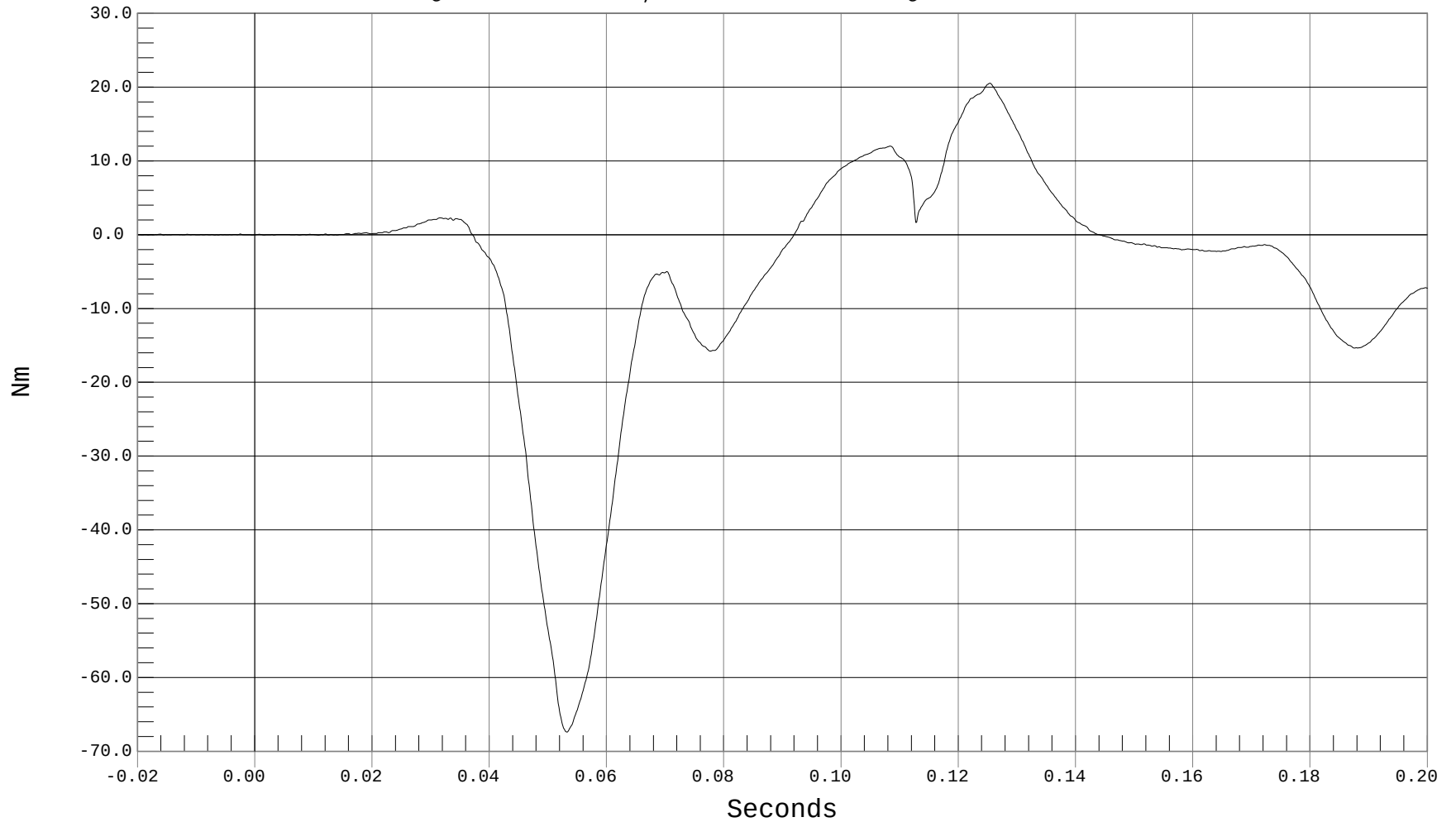
PASSENGER UPPER NECK MOMENT X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER UPPER NECK MOMENT X, B01110MF.M67

Ymin = -67.41 Nm @ 0.0532 Seconds, Ymax = 20.52 Nm @ 0.1253 Seconds





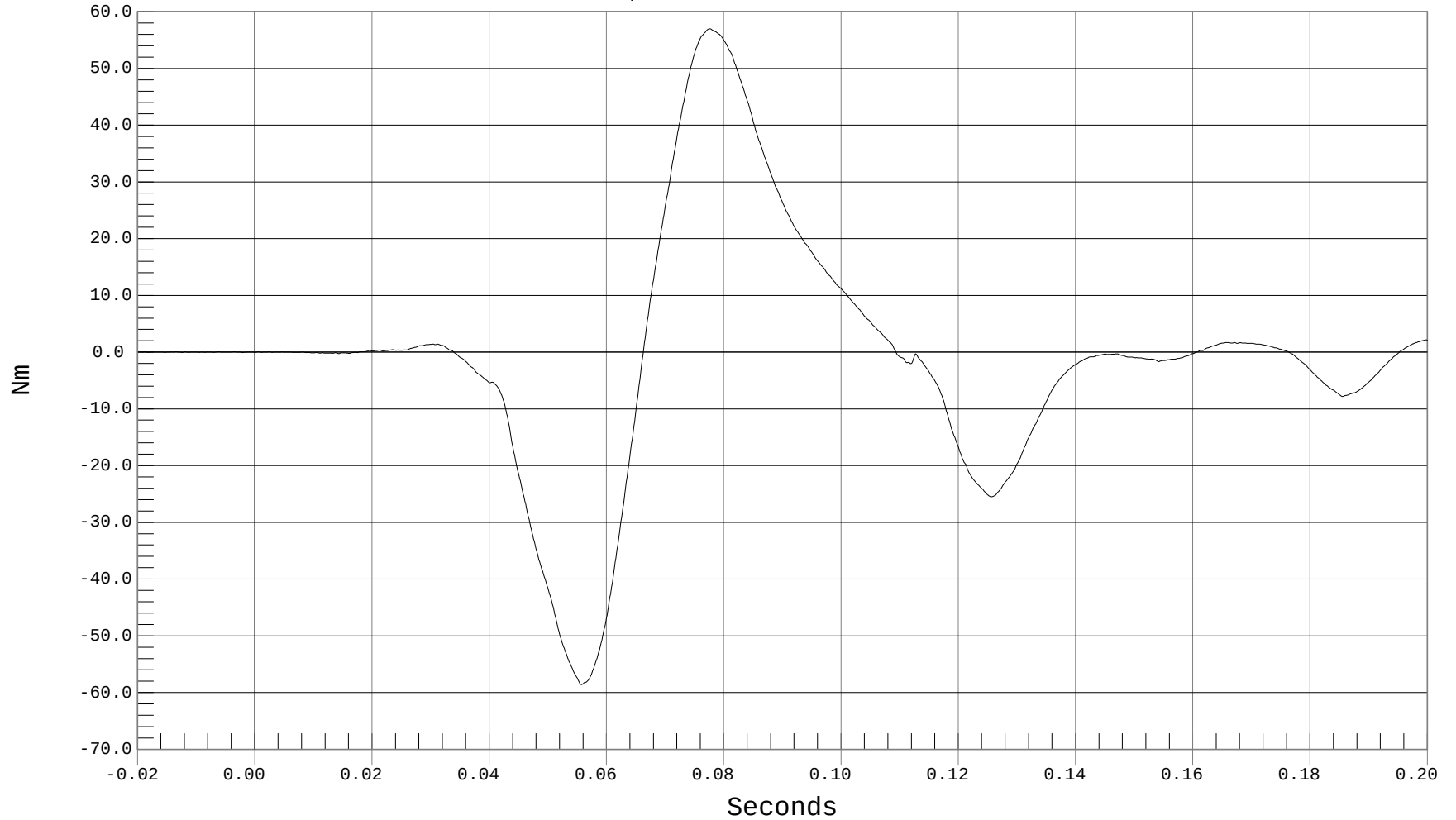
PASSENGER UPPER NECK MOMENT Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER UPPER NECK MOMENT Y, B01110MF.M68

Ymin = -58.6 Nm @ 0.0556 Seconds, Ymax = 56.98 Nm @ 0.0775 Seconds





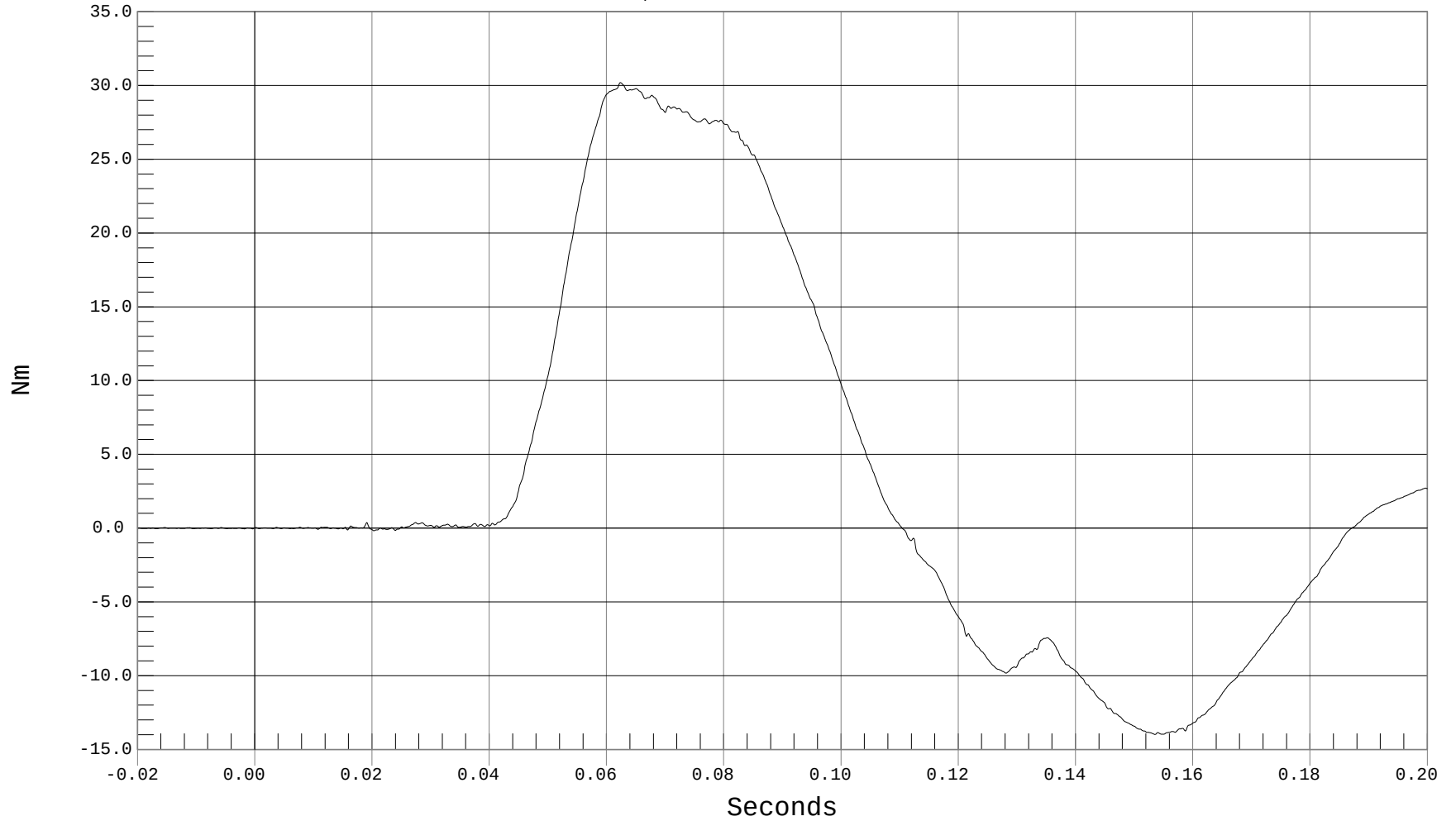
PASSENGER UPPER NECK MOMENT Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER UPPER NECK MOMENT Z, B01110MF.M69

Ymin = -13.99 Nm @ 0.1534 Seconds, Ymax = 30.21 Nm @ 0.0623 Seconds





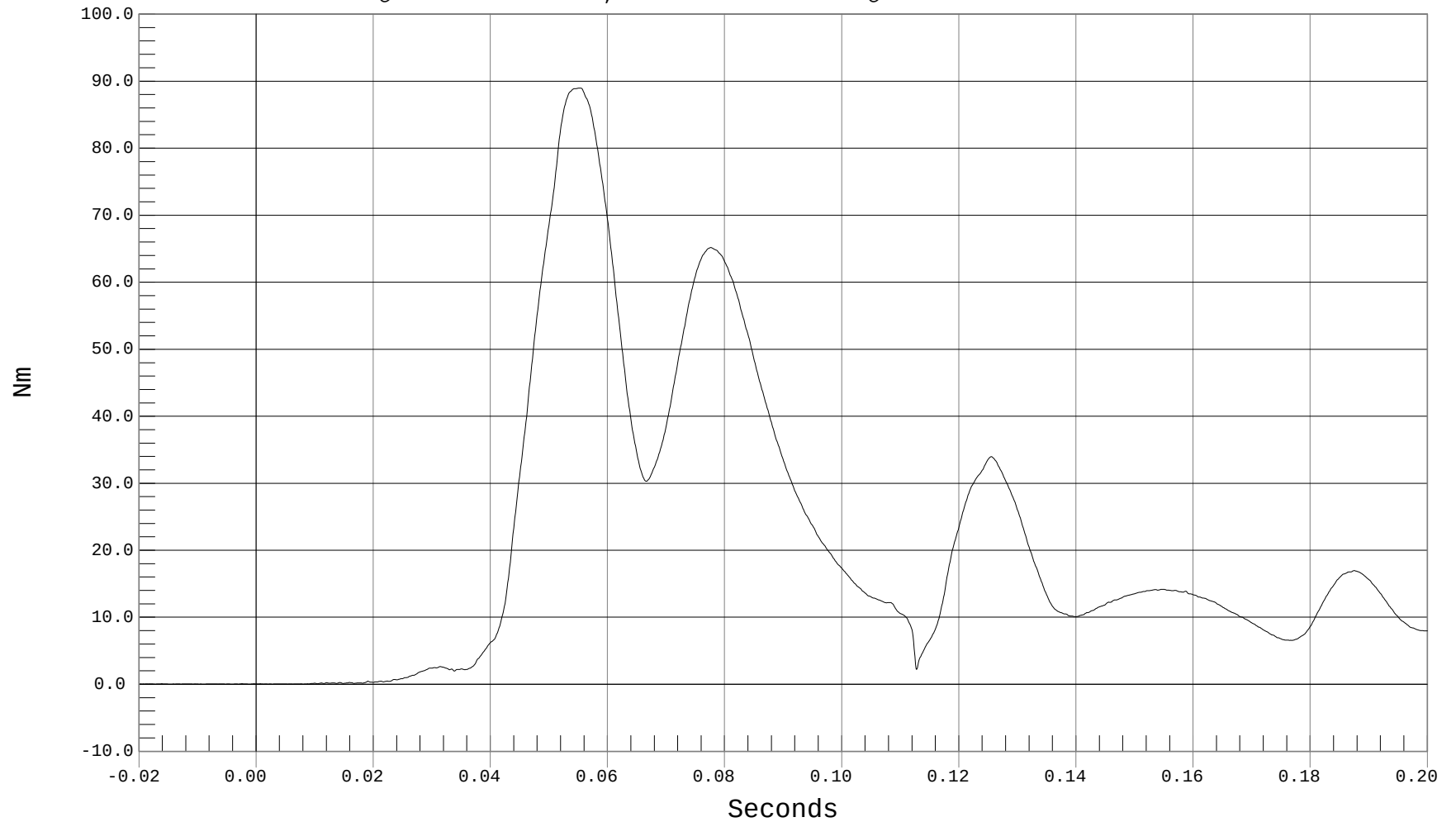
PASSENGER UPPER NECK MOMENT RESULTANT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 PASSENGER UPPER NECK MOMENT RESULTANT, B01110MV.M67

Ymin = 0 Nm @ -0.0053 Seconds, Ymax = 88.96 Nm @ 0.0553 Seconds





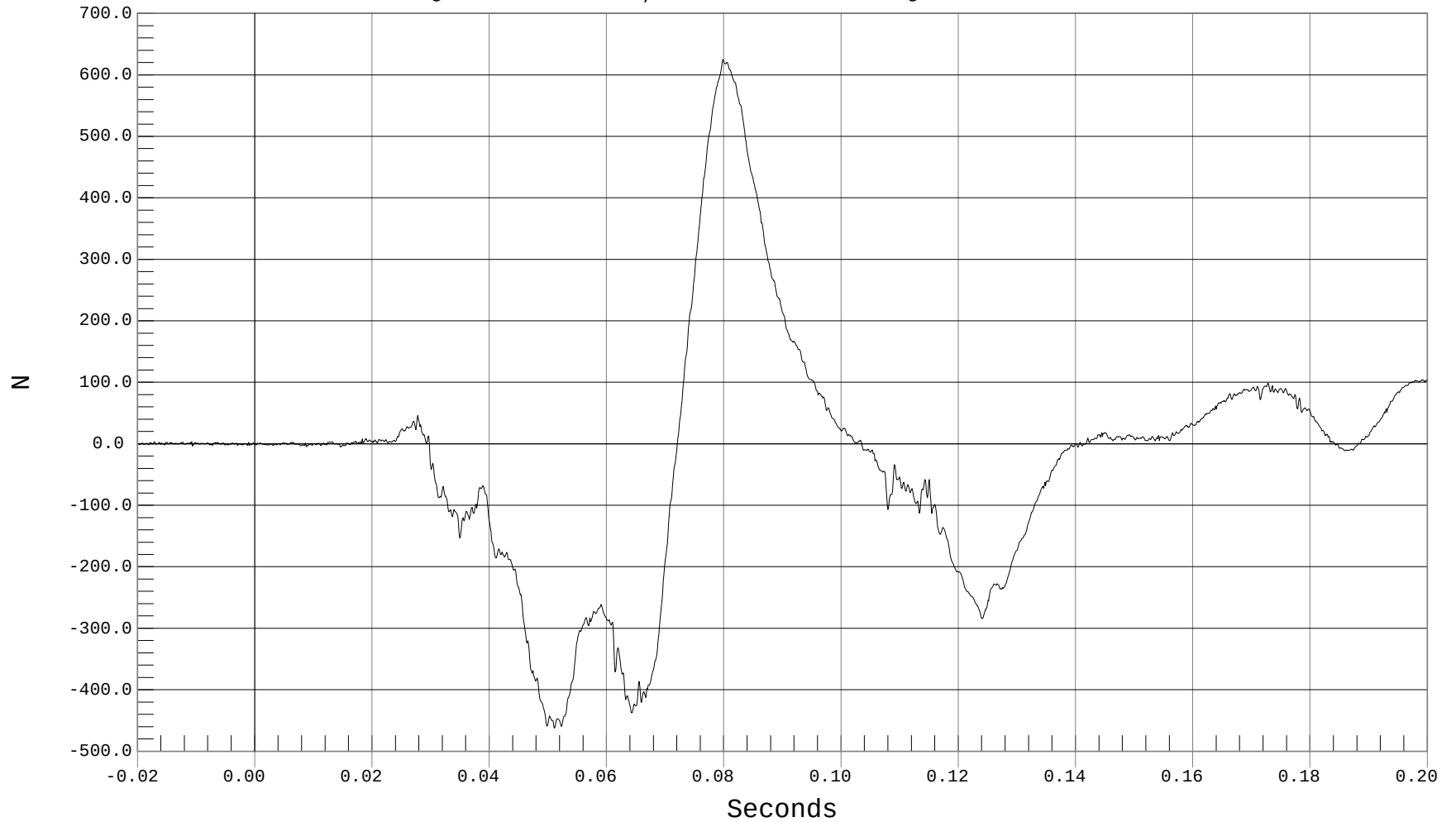
PASSENGER LOWER NECK FORCE X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER LOWER NECK FORCE X, B01110FT.F79

Ymin = -462.27 N @ 0.0510 Seconds, Ymax = 625.41 N @ 0.0798 Seconds





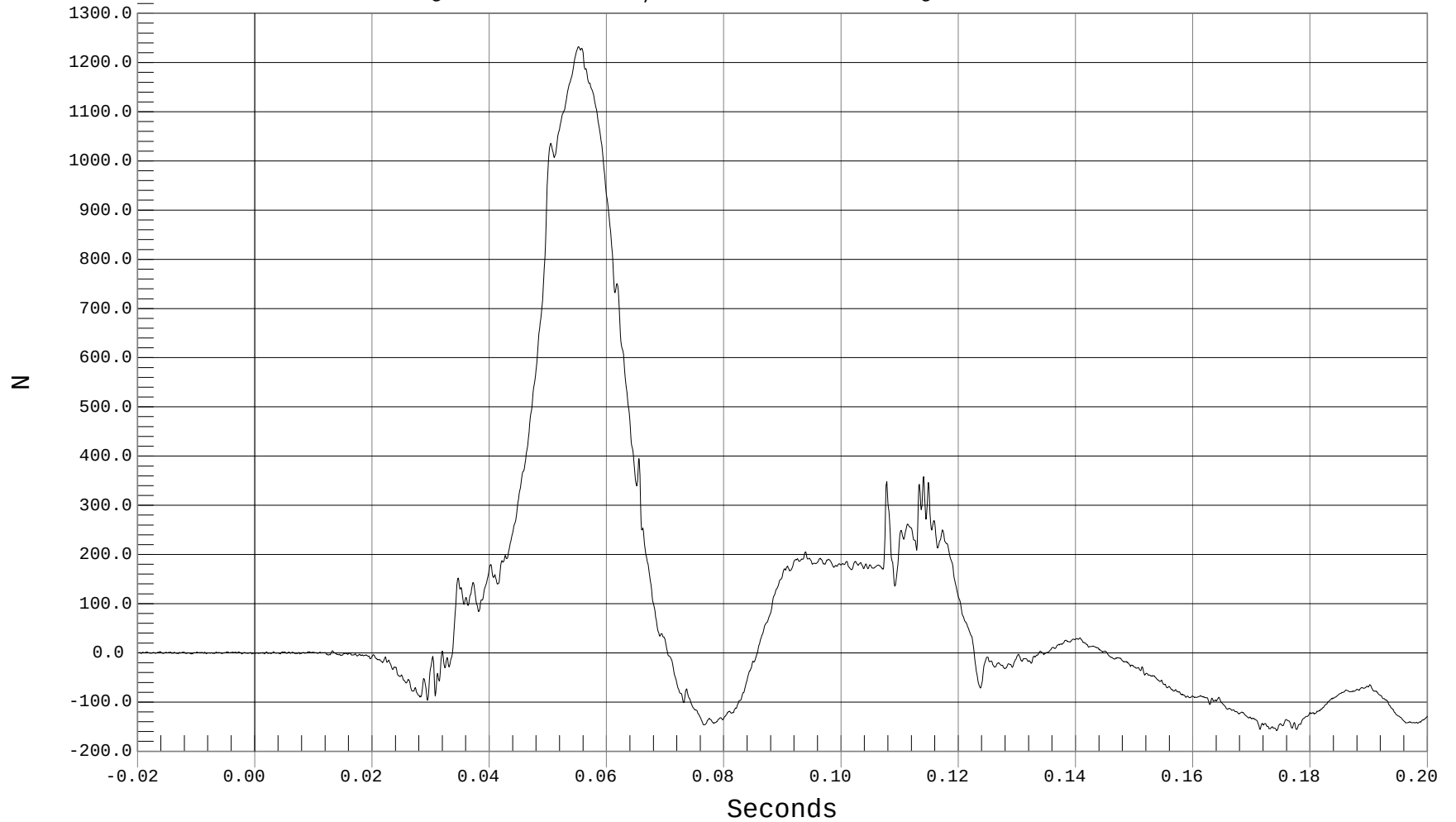
PASSENGER LOWER NECK FORCE Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER LOWER NECK FORCE Y, B01110FT.F80

Ymin = -158.11 N @ 0.1742 Seconds, Ymax = 1232.12 N @ 0.0551 Seconds





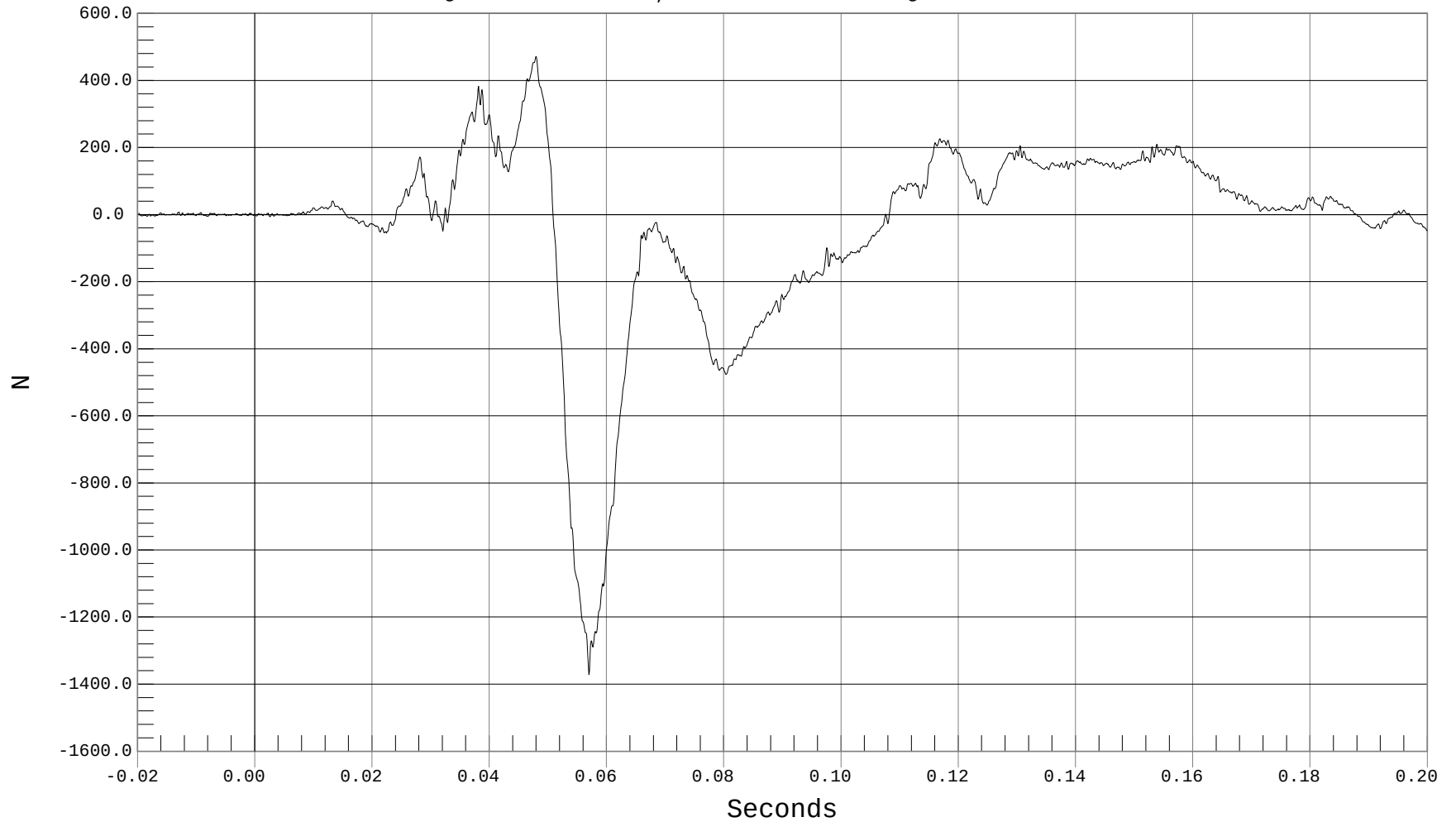
PASSENGER LOWER NECK FORCE Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER LOWER NECK FORCE Z, B01110FT.F81

Ymin = -1371.89 N @ 0.0569 Seconds, Ymax = 471.4 N @ 0.0479 Seconds





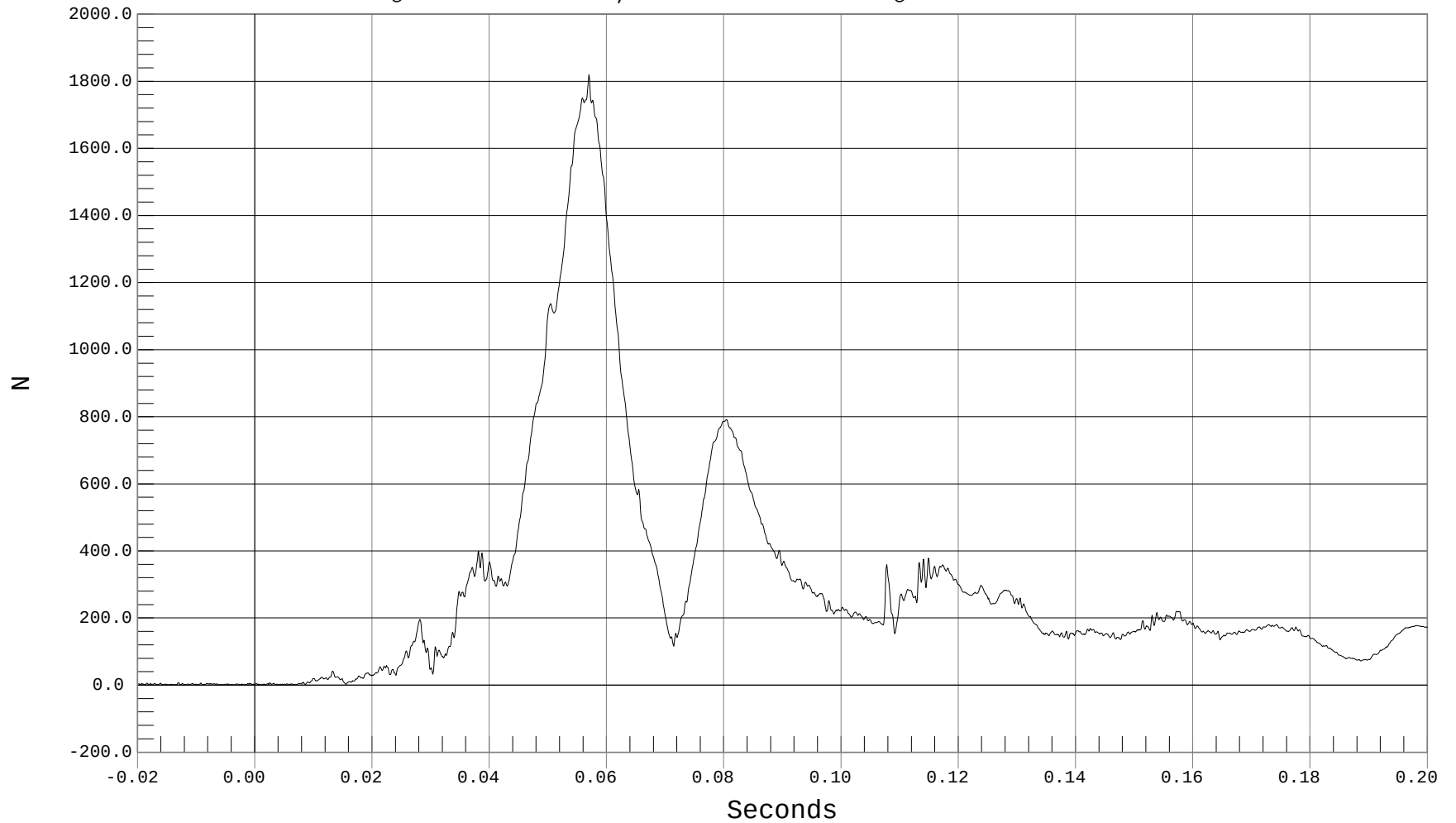
PASSENGER LOWER NECK FORCE RESULTANT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 PASSENGER LOWER NECK FORCE RESULTANT, B01110FV.F79

Ymin = .48 N @ -0.0090 Seconds, Ymax = 1819.65 N @ 0.0569 Seconds





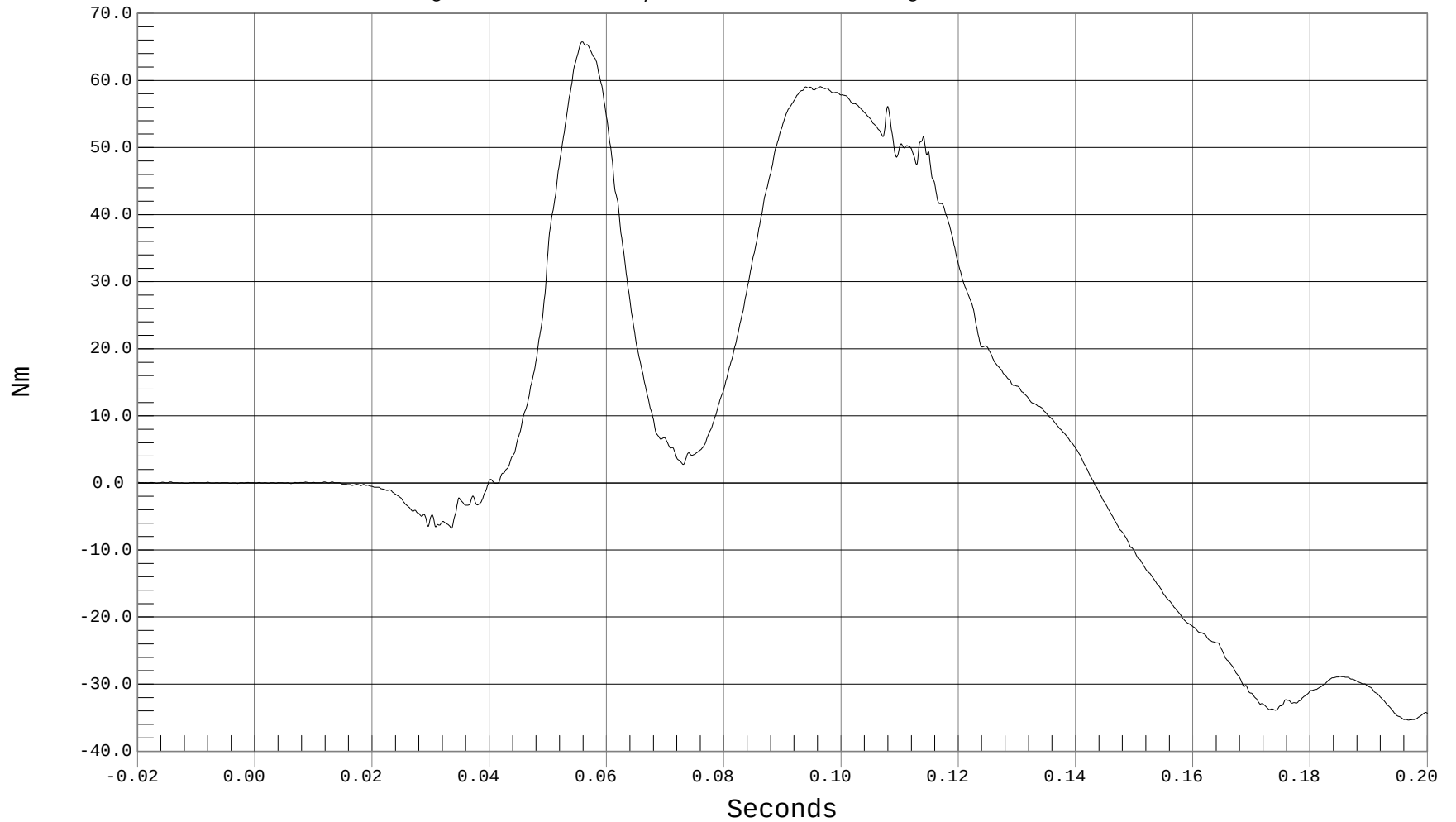
PASSENGER LOWER NECK MOMENT X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER LOWER NECK MOMENT X, B01110MF.M82

Ymin = -35.36 Nm @ 0.1967 Seconds, Ymax = 65.76 Nm @ 0.0558 Seconds





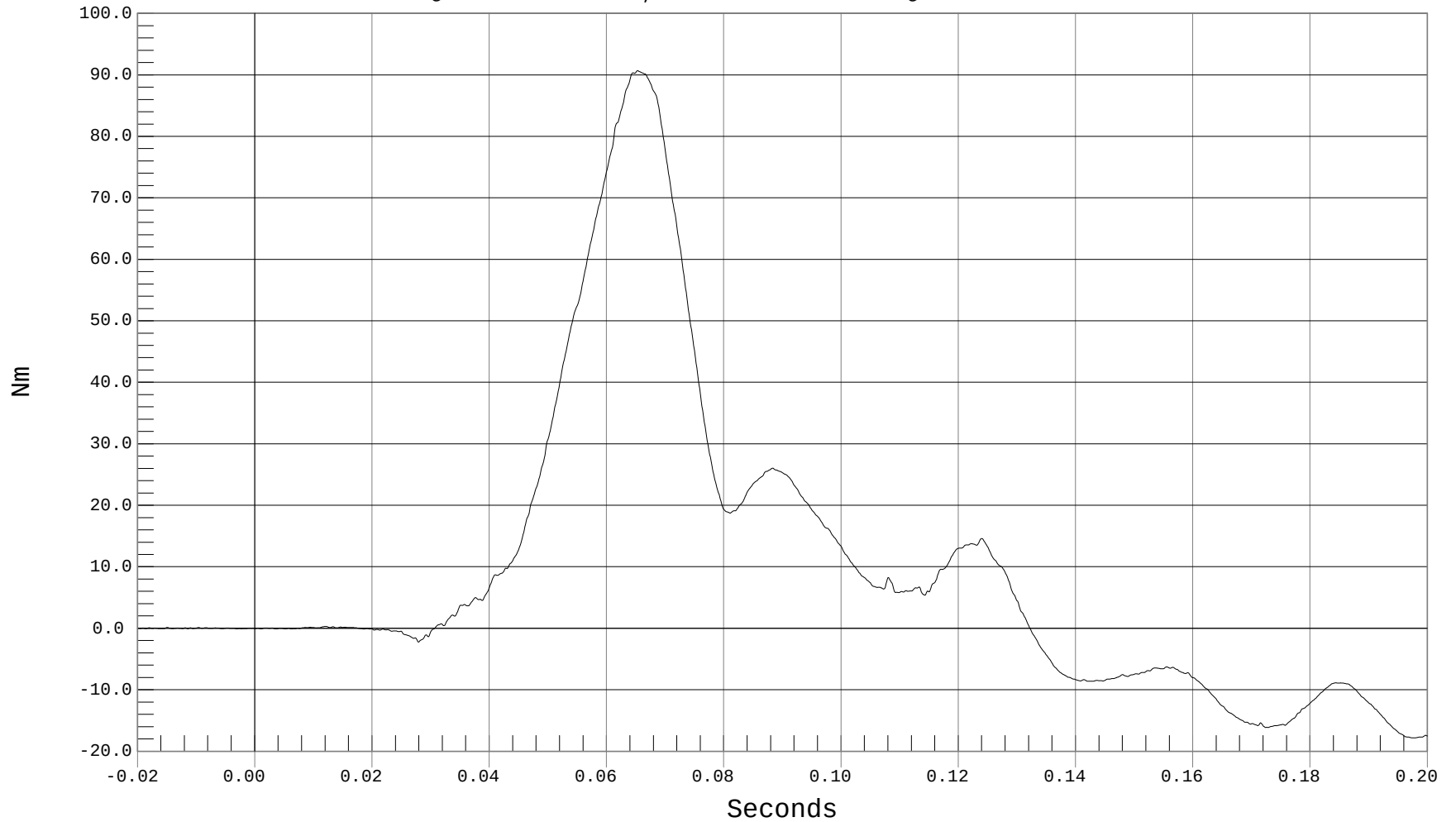
PASSENGER LOWER NECK MOMENT Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER LOWER NECK MOMENT Y, B01110MF.M83

Ymin = -17.83 Nm @ 0.1977 Seconds, Ymax = 90.67 Nm @ 0.0652 Seconds





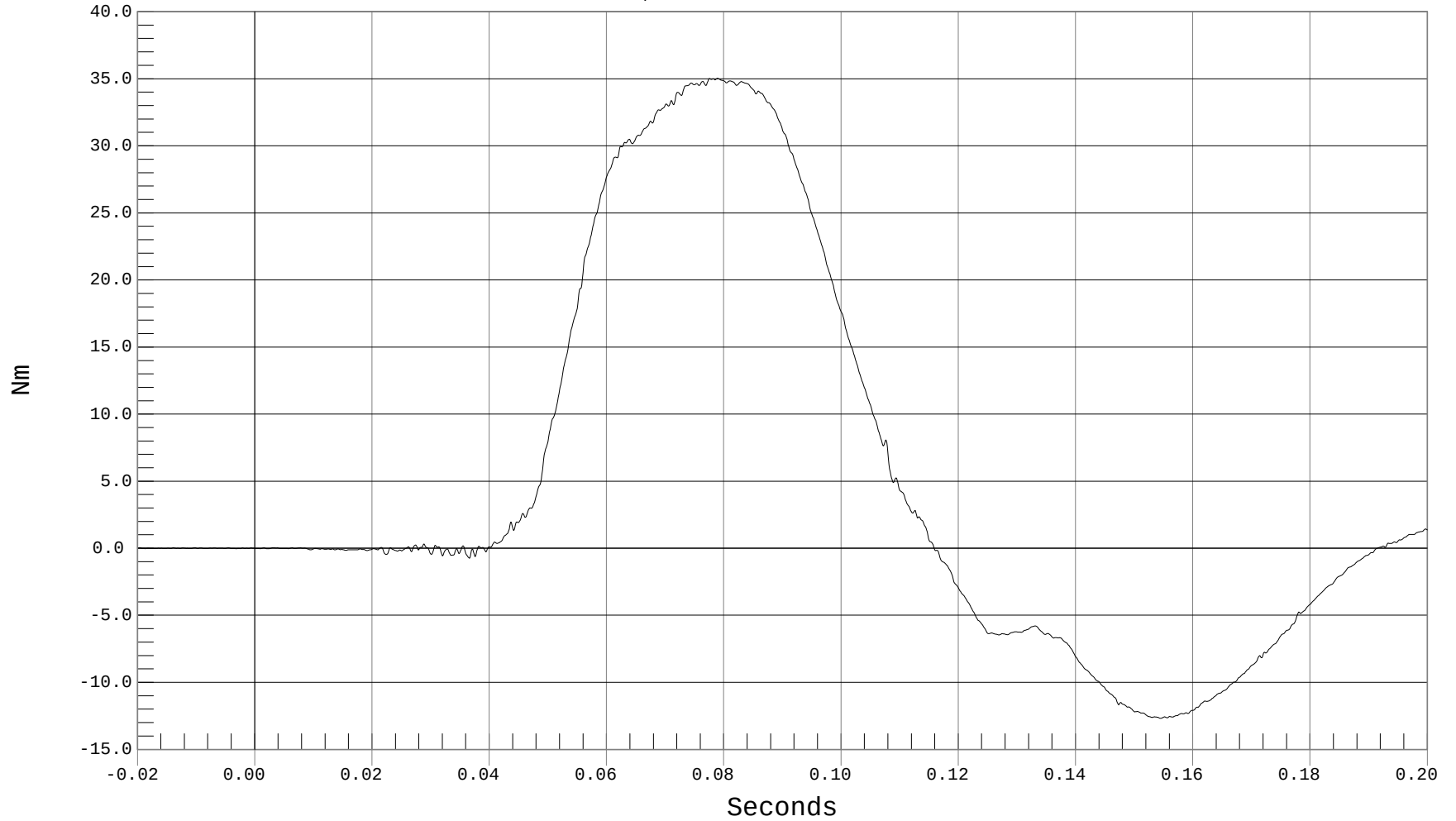
PASSENGER LOWER NECK MOMENT Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER LOWER NECK MOMENT Z, B01110MF.M84

Ymin = -12.67 Nm @ 0.1544 Seconds, Ymax = 35.04 Nm @ 0.0789 Seconds





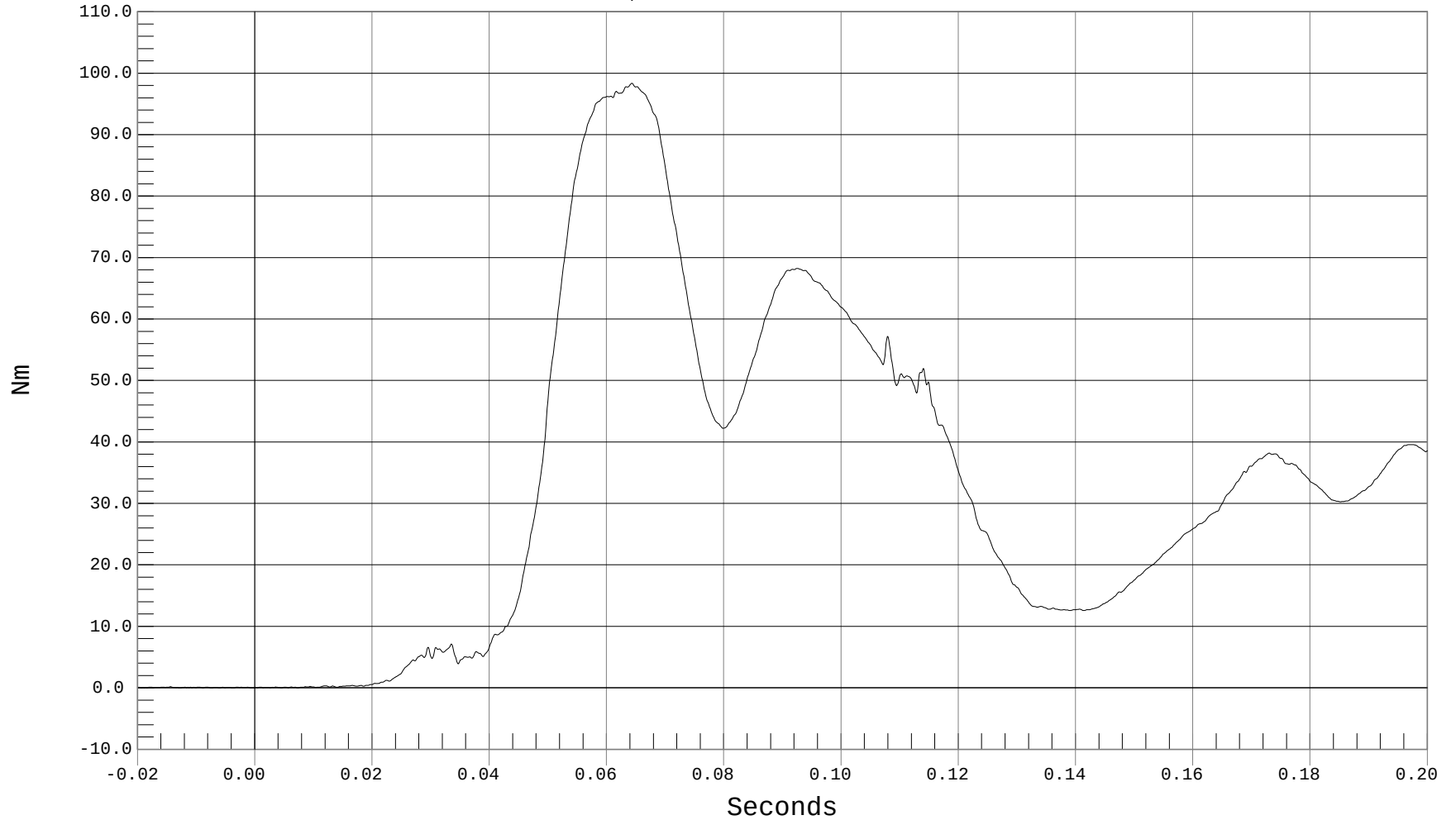
PASSENGER LOWER NECK MOMENT RESULTANT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 PASSENGER LOWER NECK MOMENT RESULTANT, B01110MV.M82

Ymin = .01 Nm @ -0.0194 Seconds, Ymax = 98.34 Nm @ 0.0642 Seconds





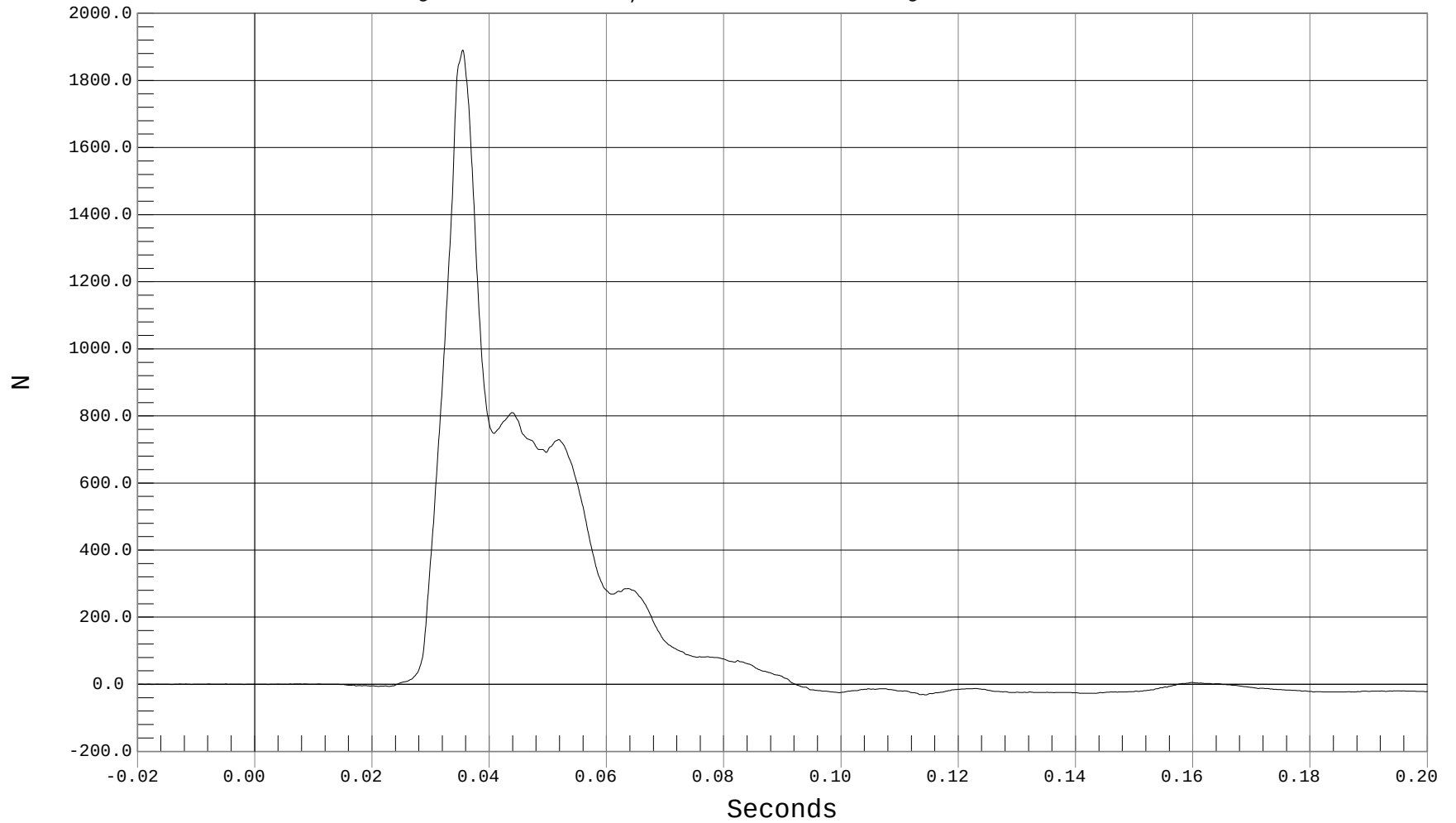
PASSENGER SHOULDER FORCE X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER SHOULDER FORCE X, B01110FF.F76

Ymin = -31.77 N @ 0.1143 Seconds, Ymax = 1890.51 N @ 0.0354 Seconds





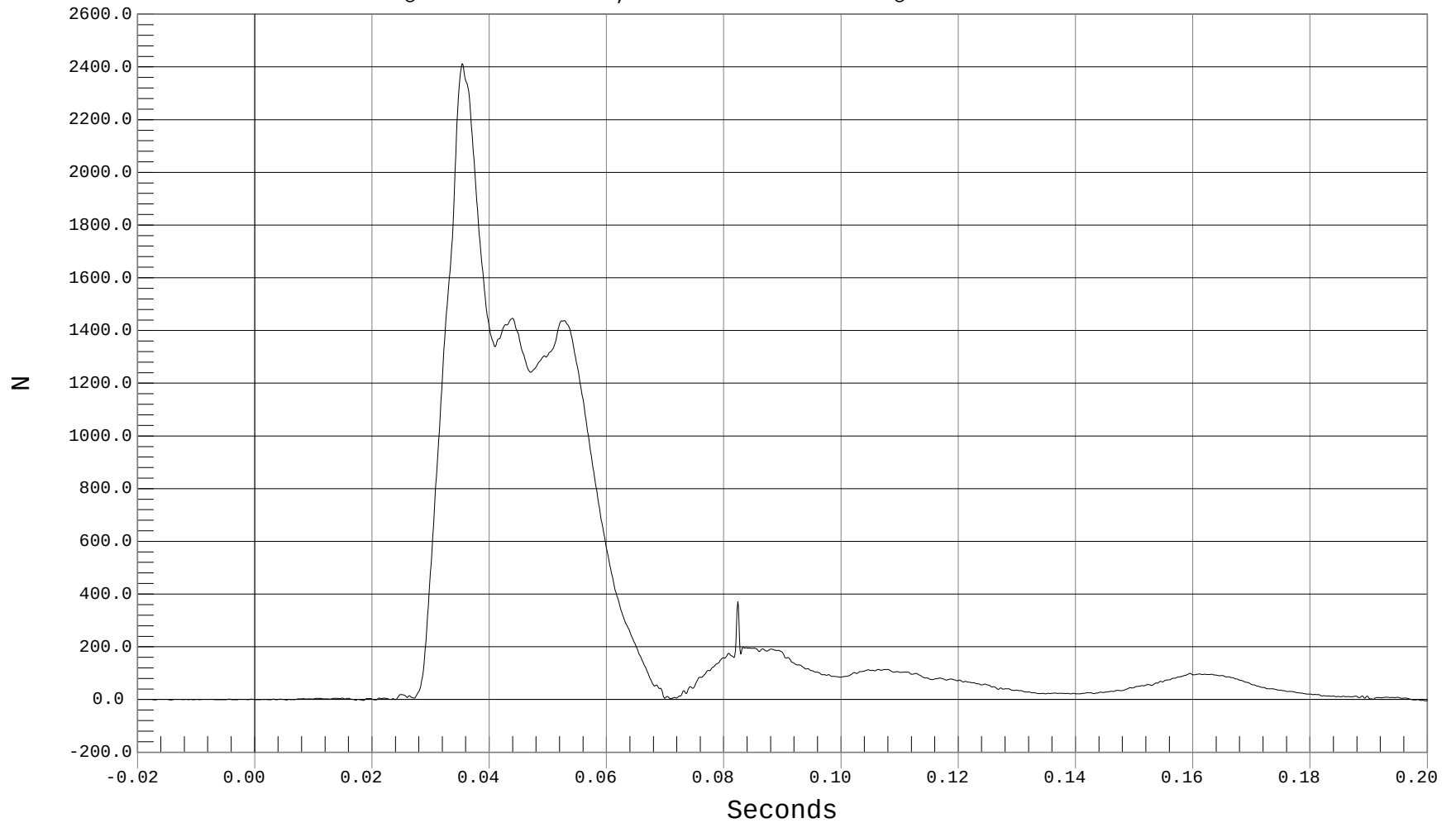
PASSENGER SHOULDER FORCE Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER SHOULDER FORCE Y, B01110FF.F77

Ymin = -5.28 N @ 0.1996 Seconds, Ymax = 2412.45 N @ 0.0353 Seconds



B-111



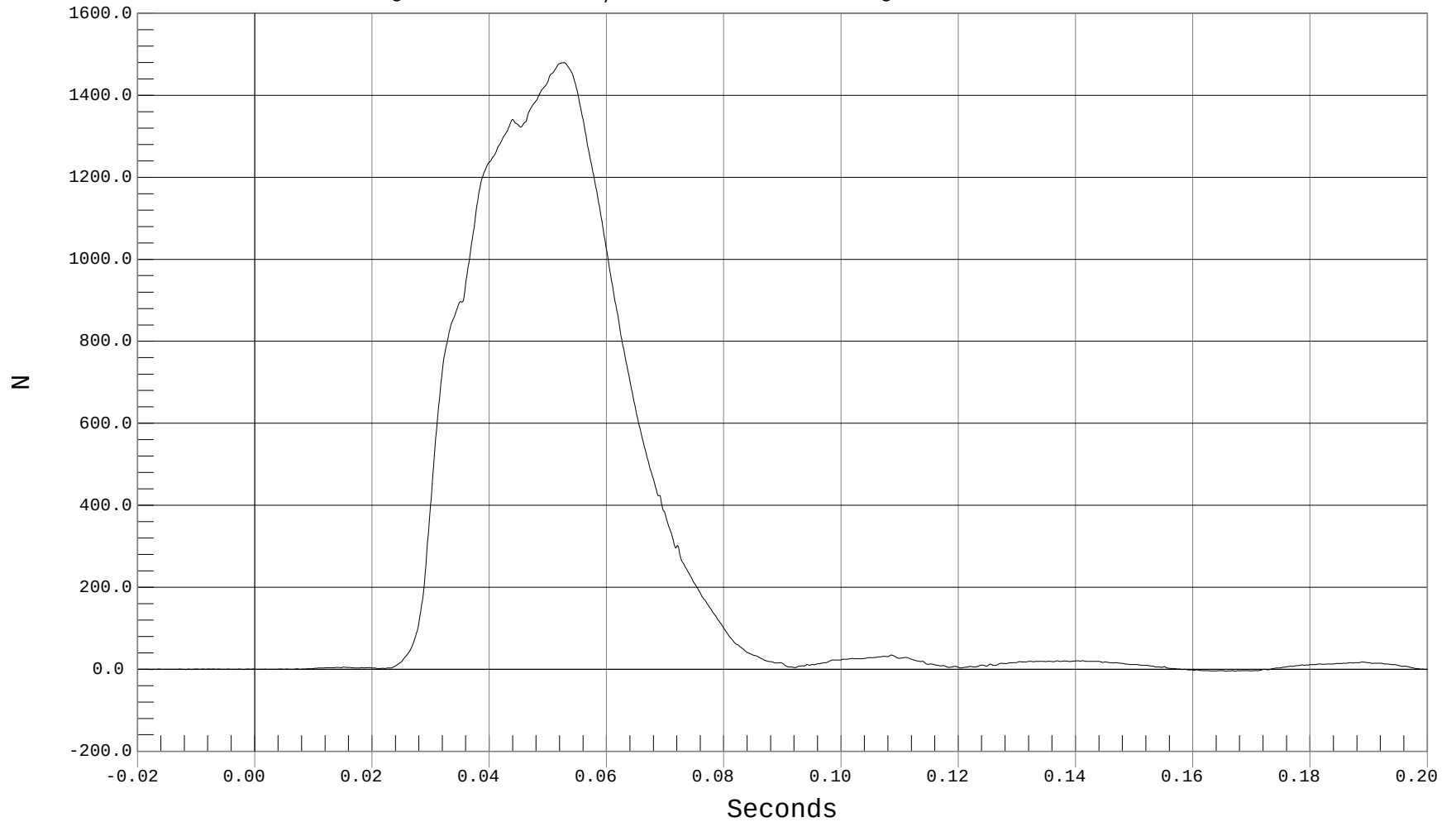
PASSENGER SHOULDER FORCE Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER SHOULDER FORCE Z, B01110FF.F78

Ymin = -4.5 N @ 0.1672 Seconds, Ymax = 1479.69 N @ 0.0526 Seconds





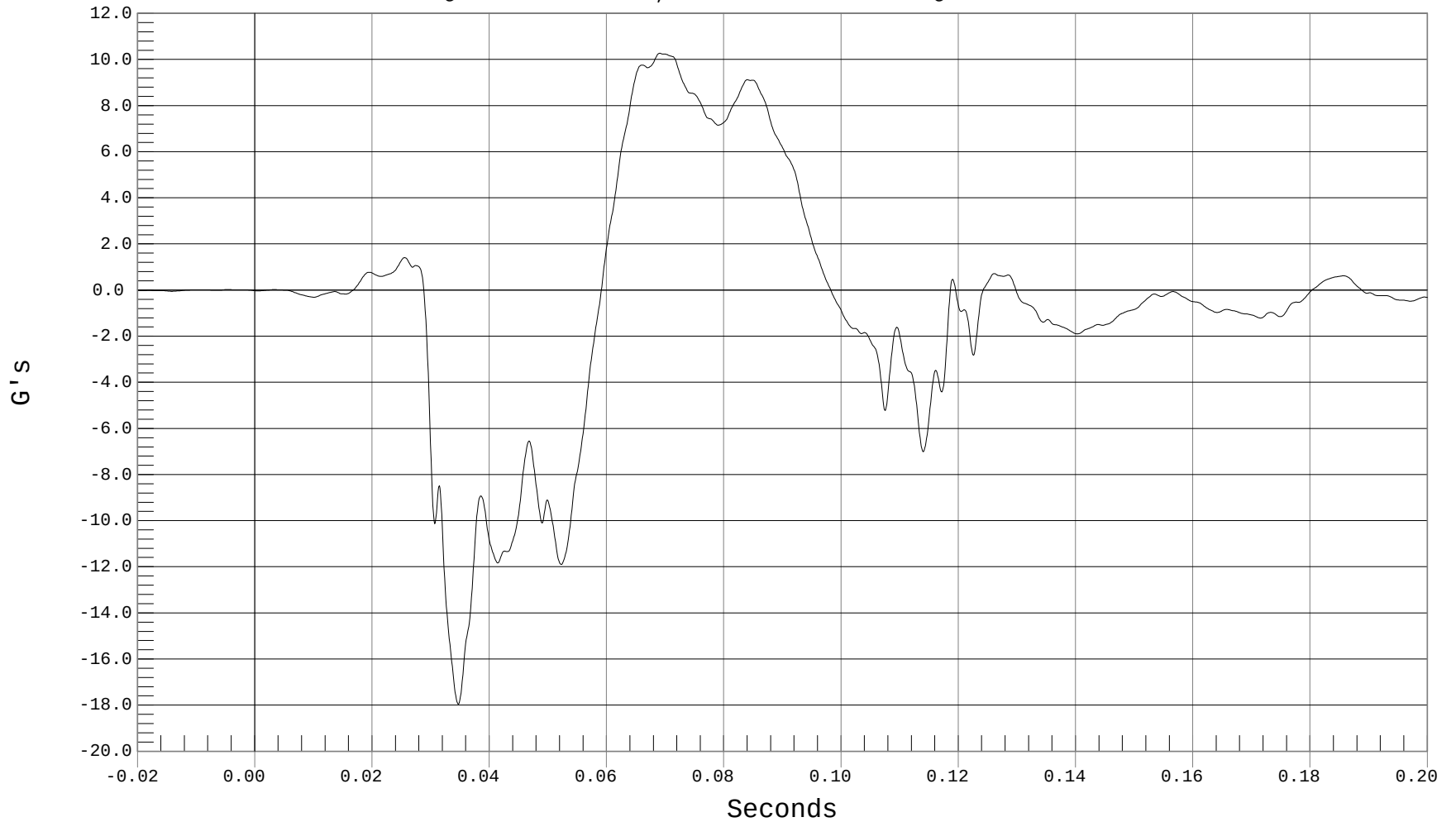
PASSENGER UPPER SPINE X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 REAR PASSENGER UPPER SPINE X, B01110AF.A80

Ymin = -17.96 G's @ 0.0346 Seconds, Ymax = 10.27 G's @ 0.0690 Seconds





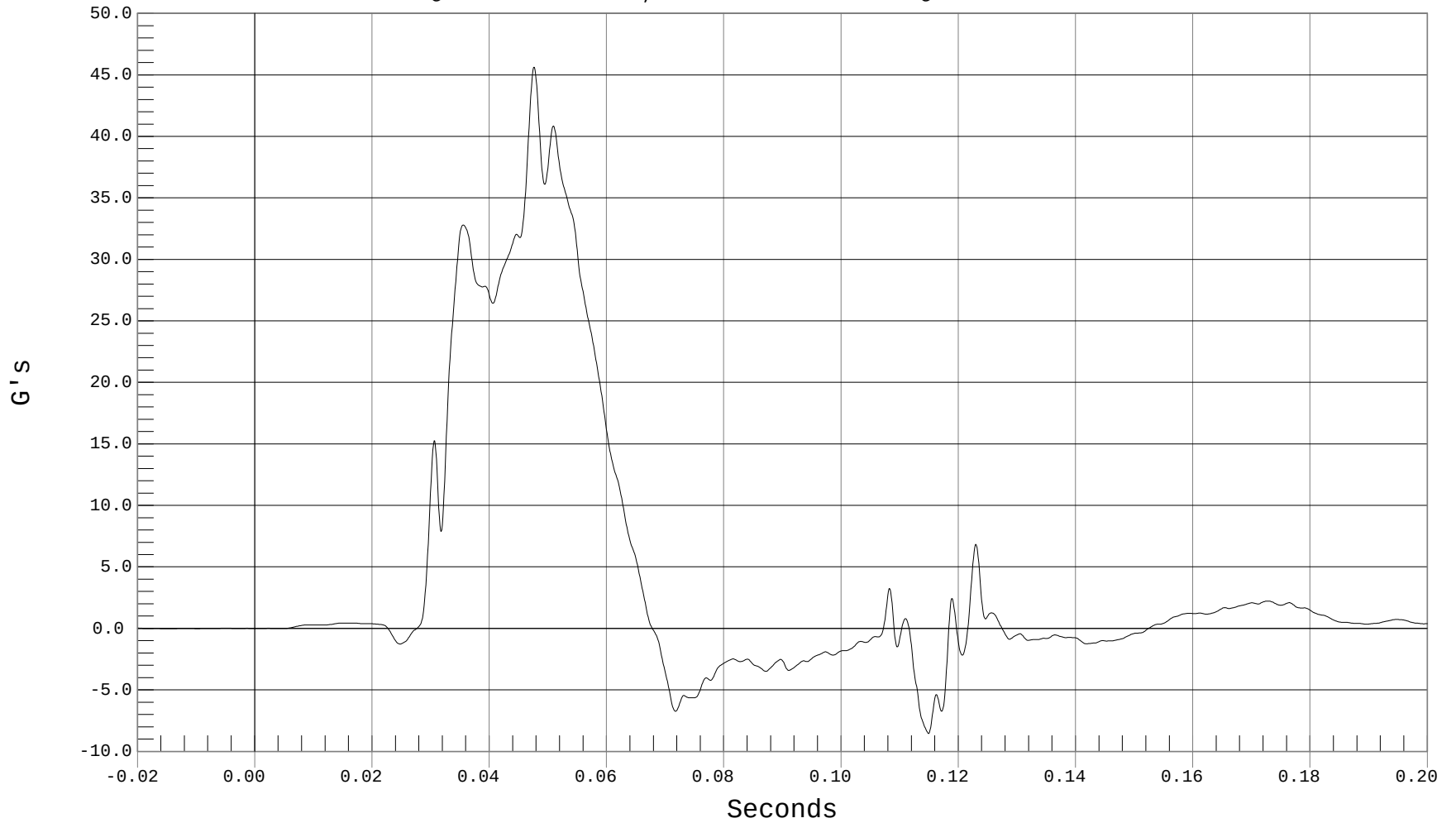
PASSENGER UPPER SPINE Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 REAR PASSENGER UPPER SPINE Y, B01110AF.A81

Ymin = -8.55 G's @ 0.1148 Seconds, Ymax = 45.61 G's @ 0.0476 Seconds





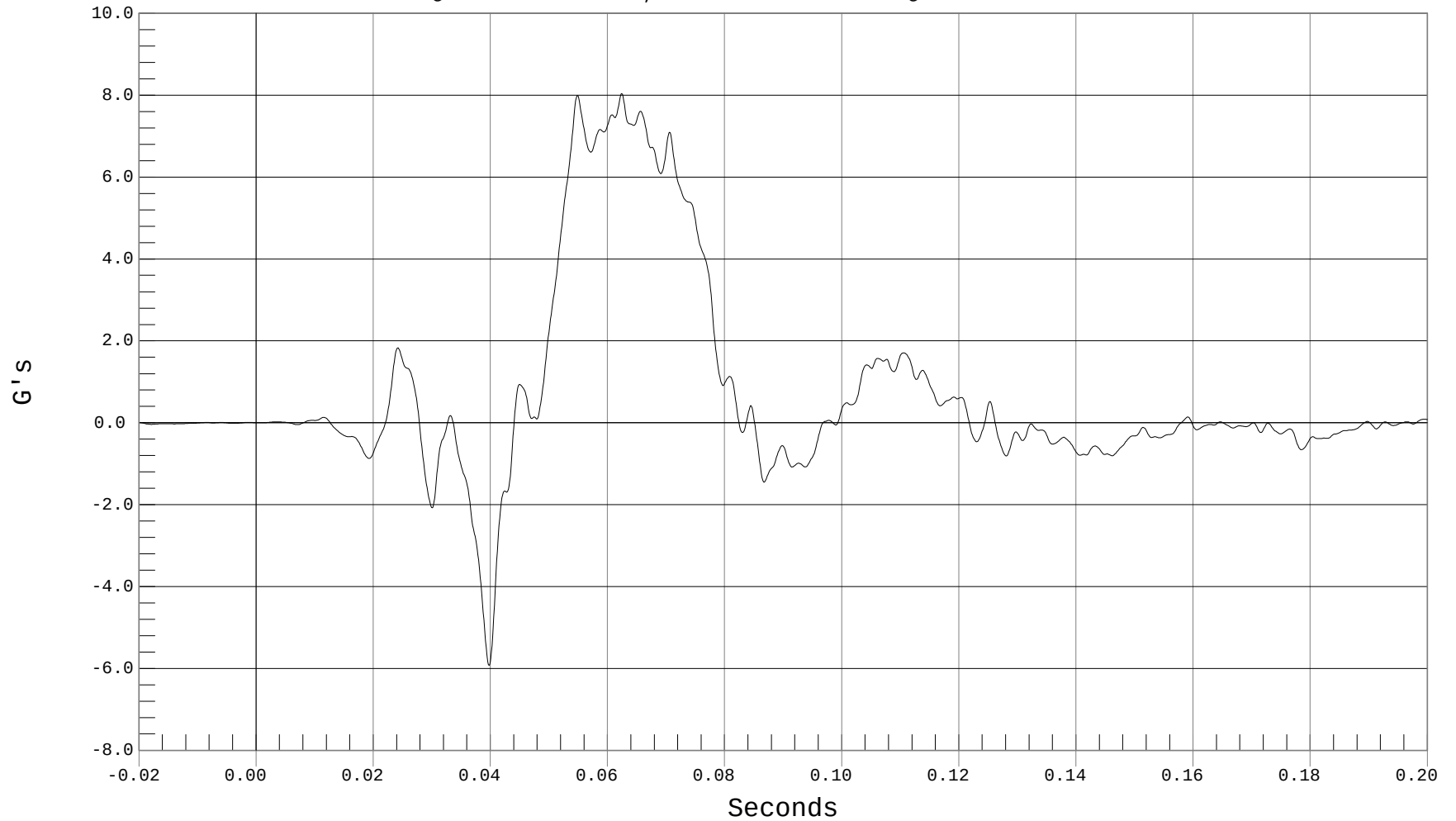
PASSENGER UPPER SPINE Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 REAR PASSENGER UPPER SPINE Z, B01110AF.A82

Ymin = -5.93 G's @ 0.0397 Seconds, Ymax = 8.04 G's @ 0.0624 Seconds





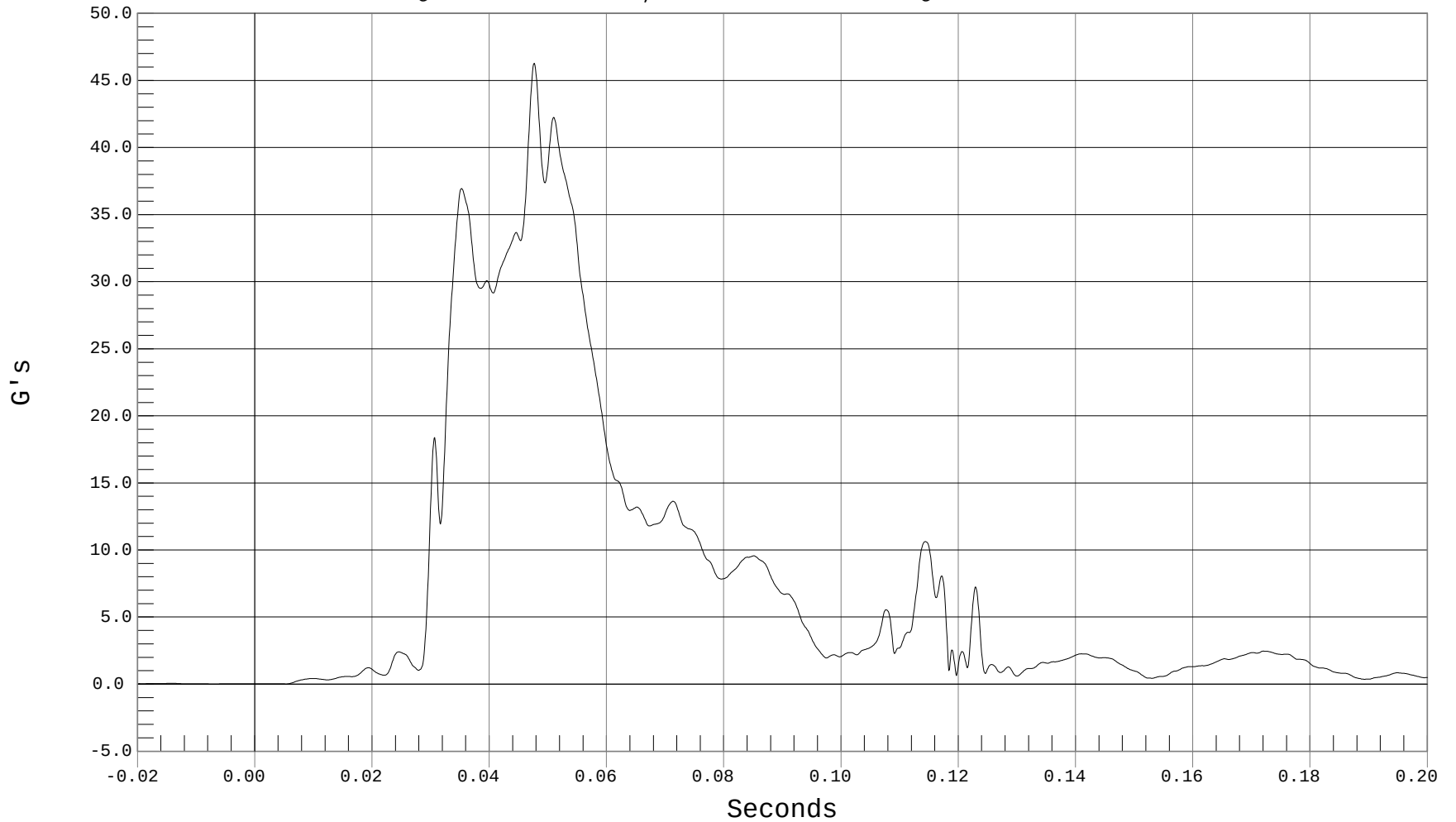
PASSENGER UPPER SPINE RESULTANT ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 PASSENGER UPPER SPINE RESULTANT, B01110AV.A80

Ymin = .01 G's @ -0.0076 Seconds, Ymax = 46.27 G's @ 0.0476 Seconds





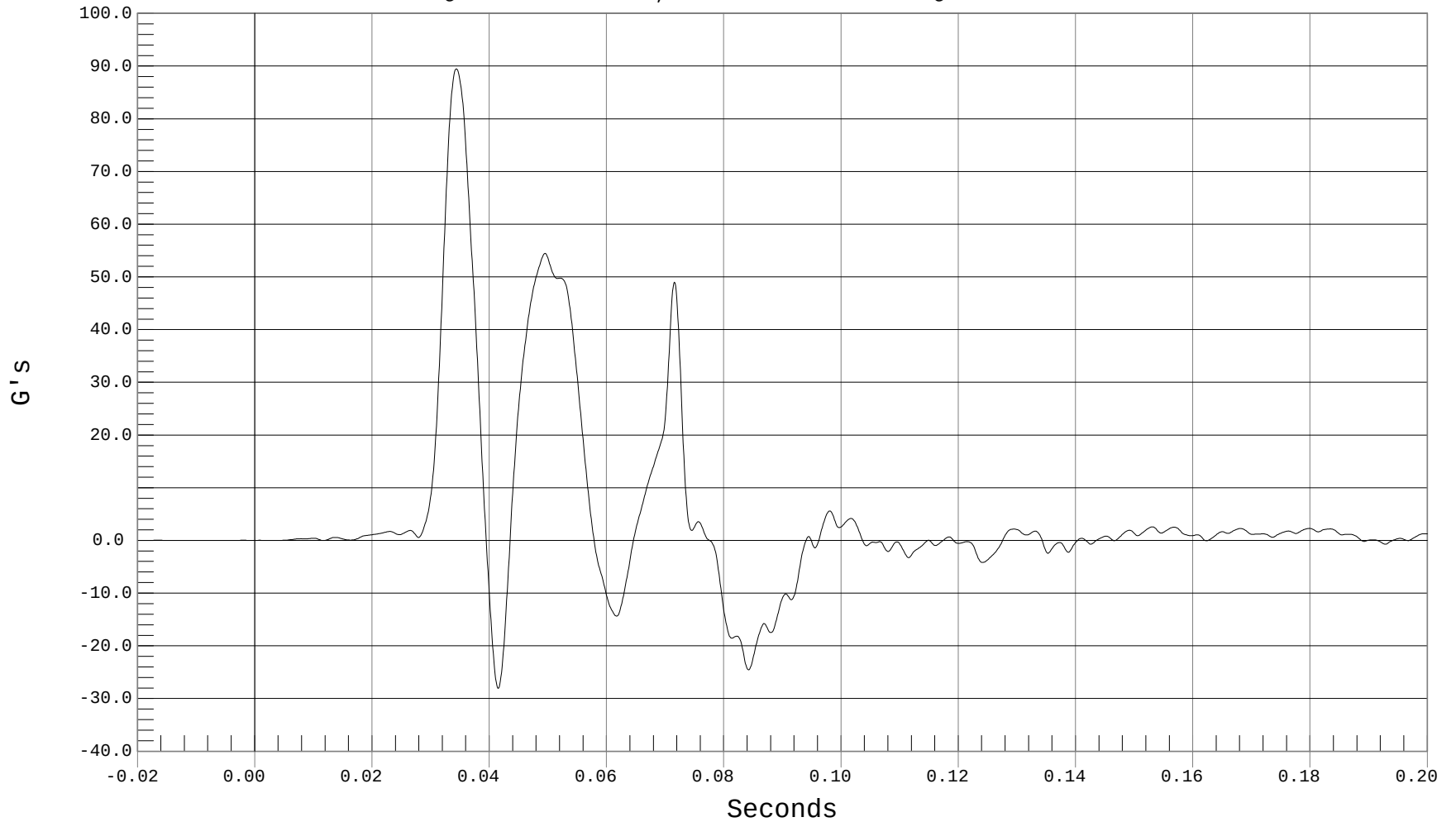
PASSENGER UPPER RIB Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 REAR PASSENGER UPPER RIB Y, B01110AF.A83

Ymin = -28.04 G's @ 0.0414 Seconds, Ymax = 89.48 G's @ 0.0343 Seconds





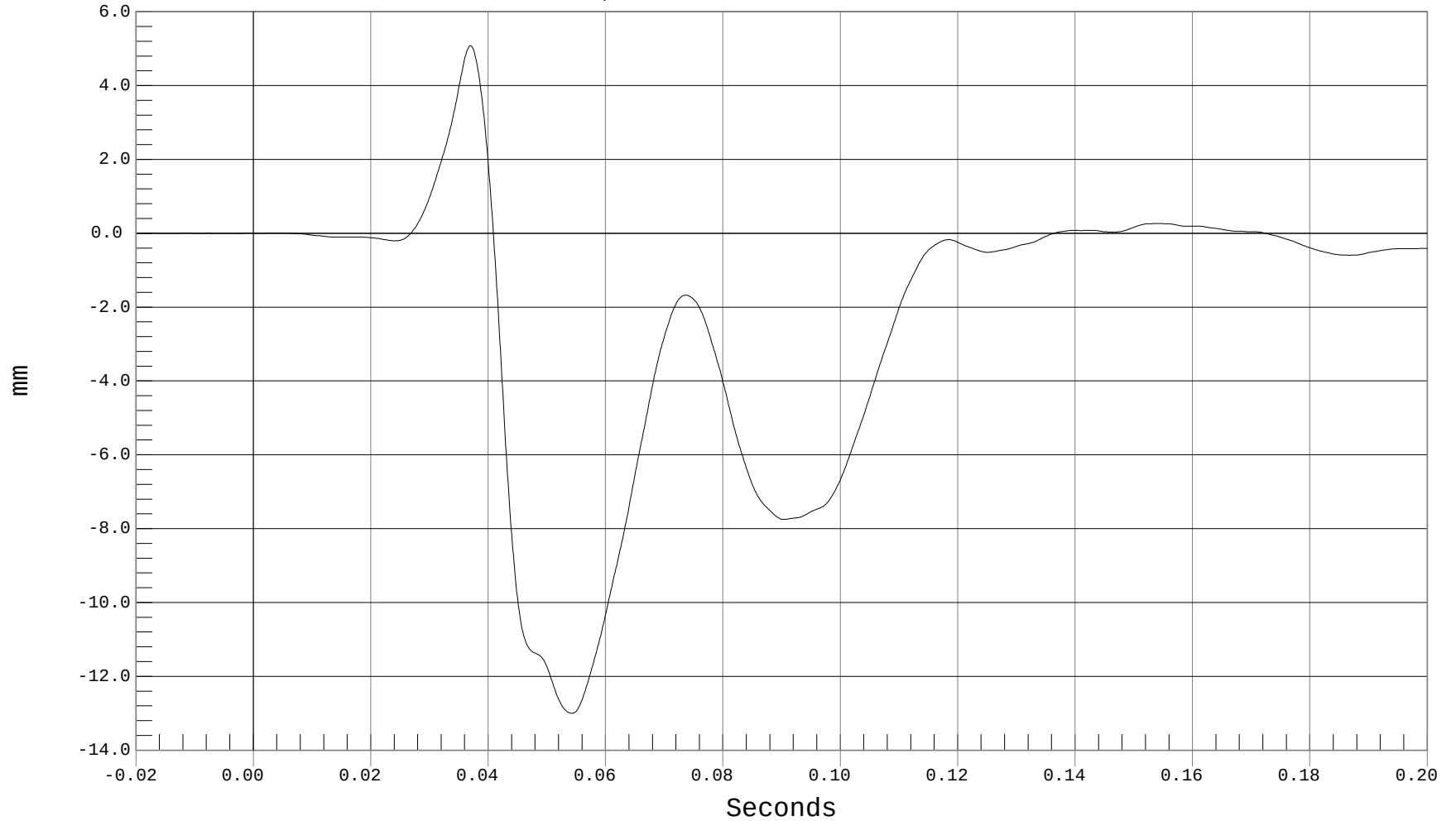
PASSENGER UPPER RIB DISPLACEMENT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 REAR PASSENGER UPPER RIB DISPLACEMENT, B01110DF.D86

Ymin = -13 mm @ 0.0542 Seconds, Ymax = 5.08 mm @ 0.0369 Seconds





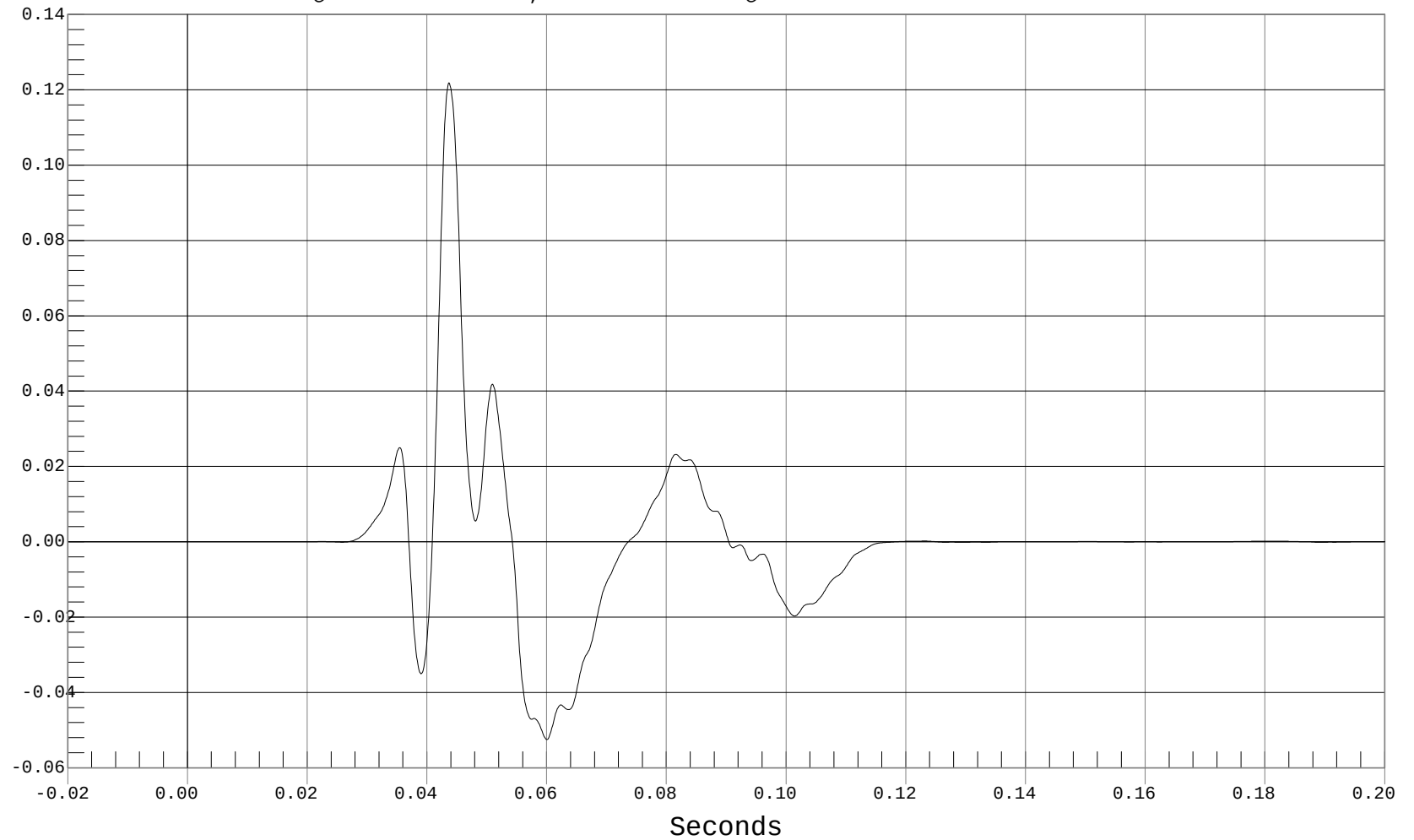
PASSENGER UPPER RIB VISCOUS CRITERIA

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 Viscous Criterion, B01110DV.C86

Ymin = -.05 @ 0.0600 Seconds, Ymax = .12 @ 0.0436 Seconds





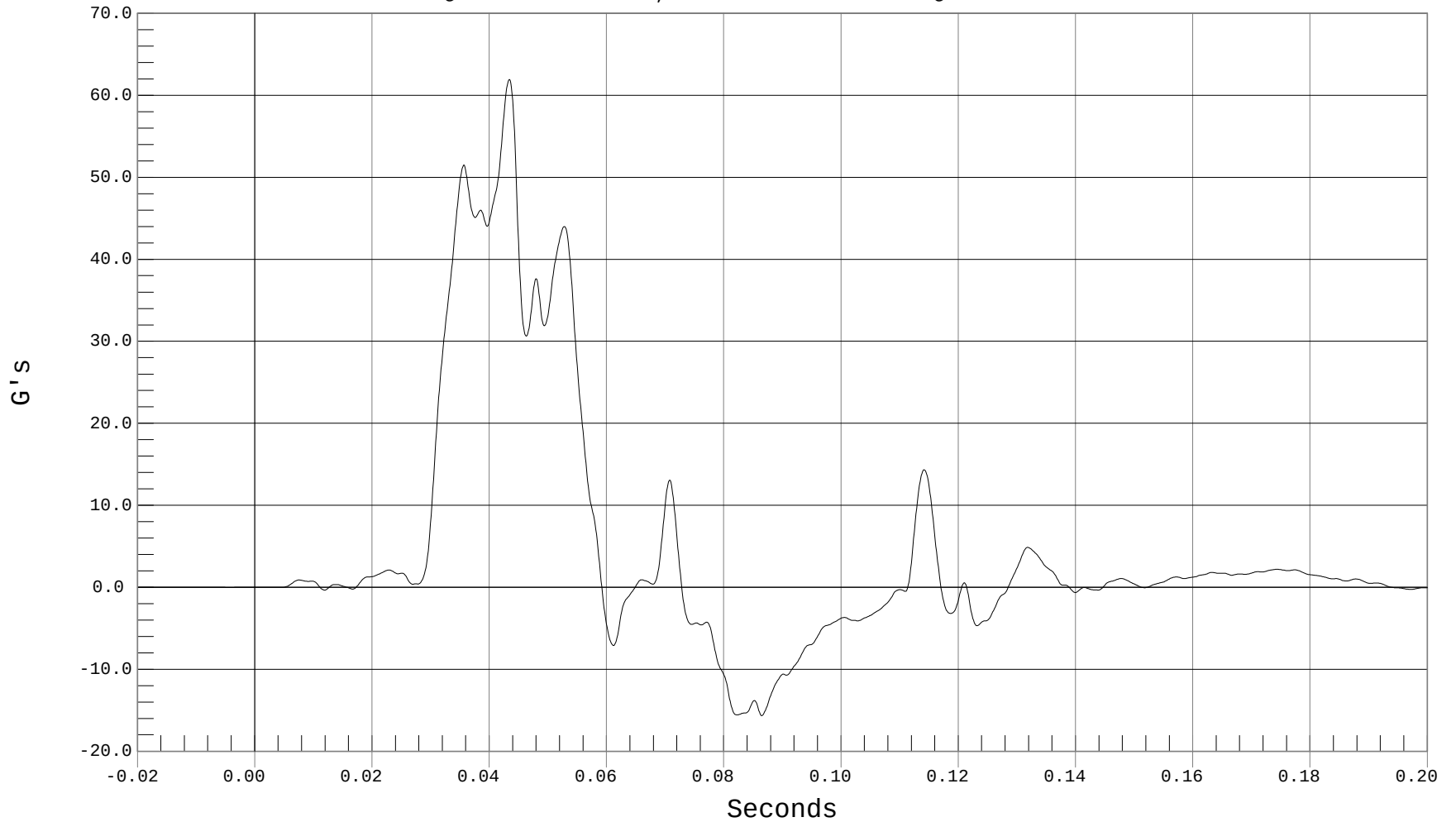
PASSENGER MID RIB Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 REAR PASSENGER MID RIB Y, B01110AF.A84

Ymin = -15.66 G's @ 0.0864 Seconds, Ymax = 61.93 G's @ 0.0433 Seconds





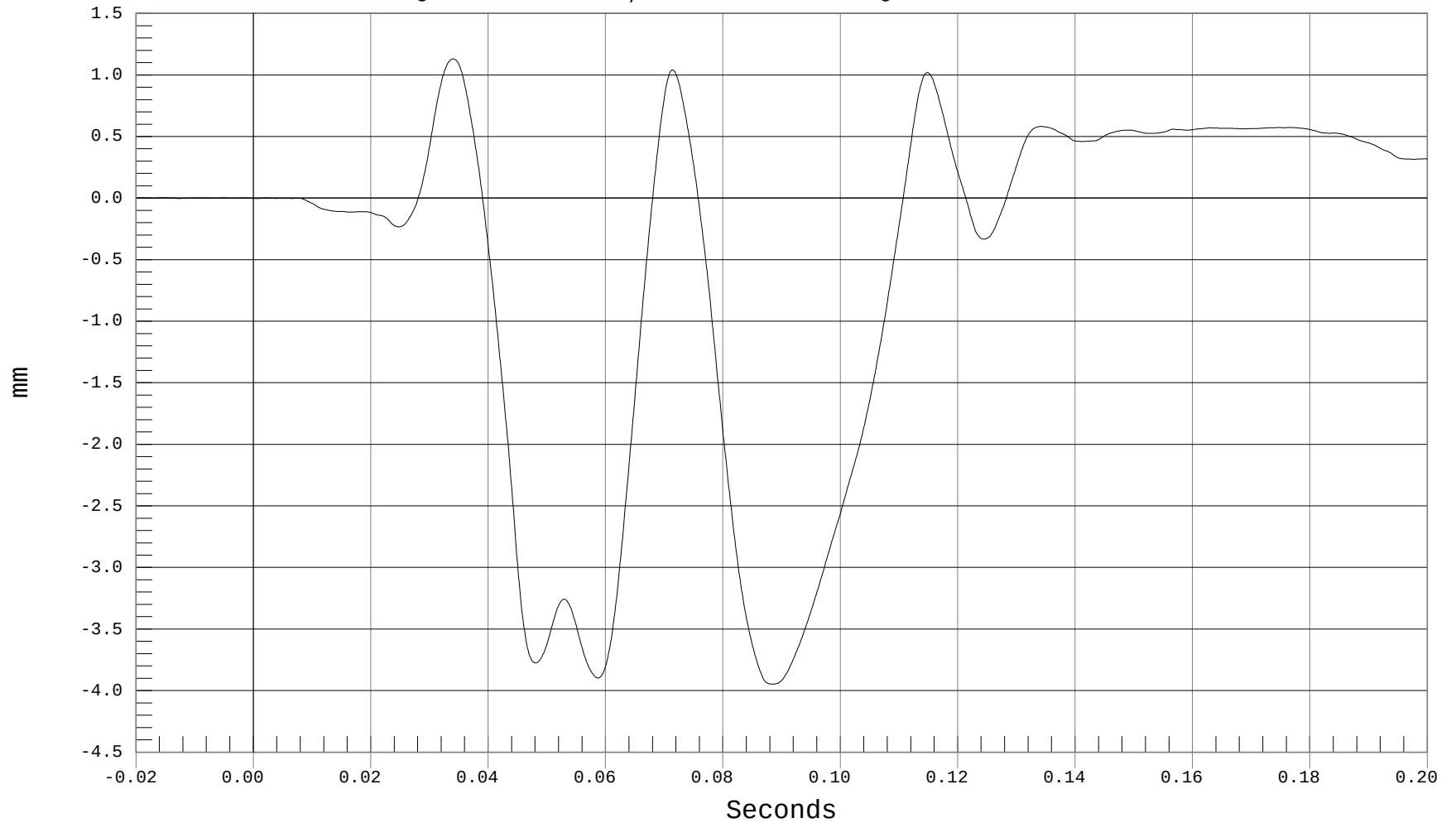
PASSENGER MID RIB DISPLACEMENT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 REAR PASSENGER MID RIB DISPLACEMENT, B01110DF.D87

Ymin = -3.95 mm @ 0.0884 Seconds, Ymax = 1.13 mm @ 0.0339 Seconds





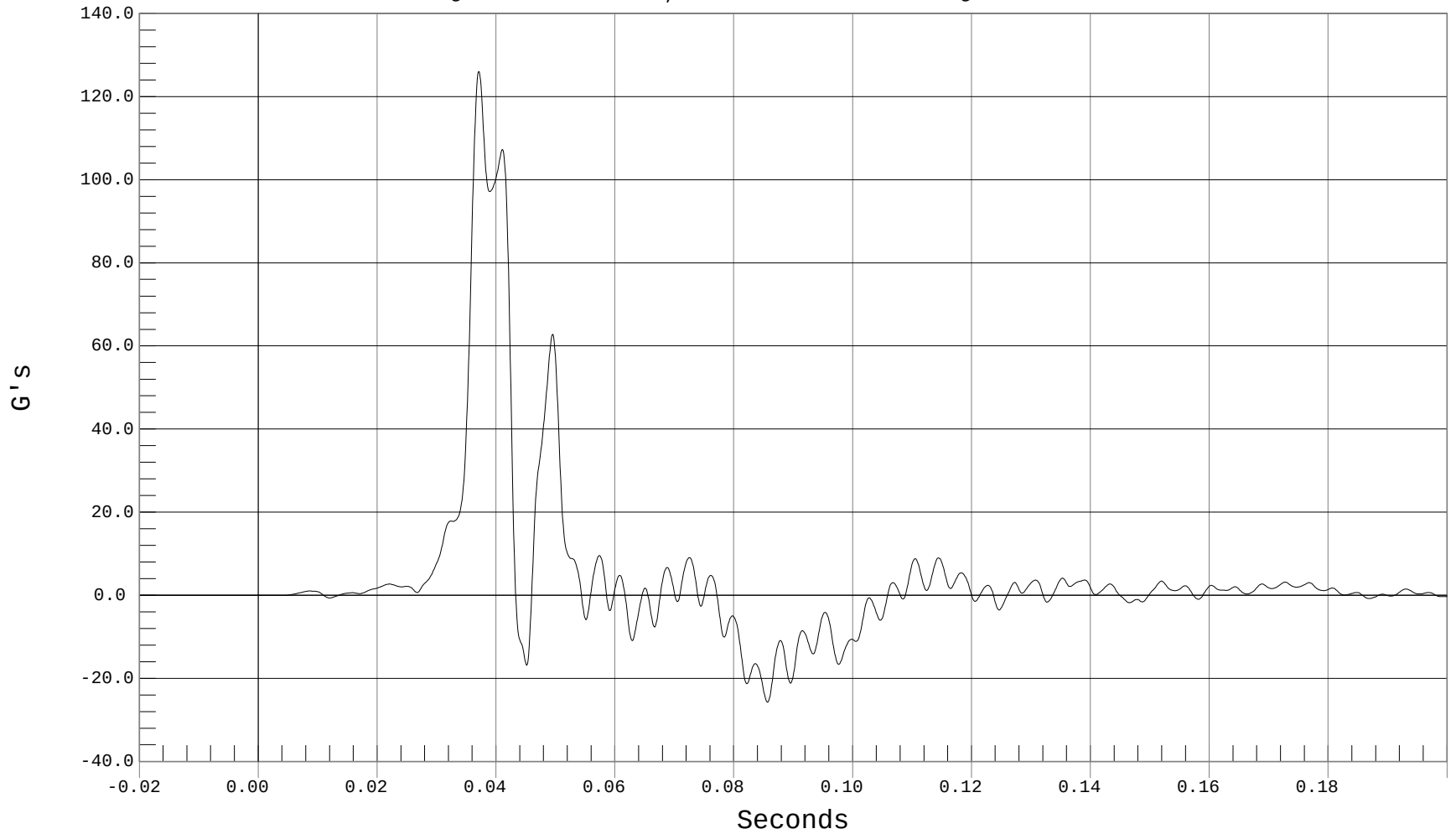
PASSENGER LOWER RIB Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 REAR PASSENGER LOWER RIB Y, B01110AF.A85

Ymin = -25.76 G's @ 0.0856 Seconds, Ymax = 126.11 G's @ 0.0370 Seconds





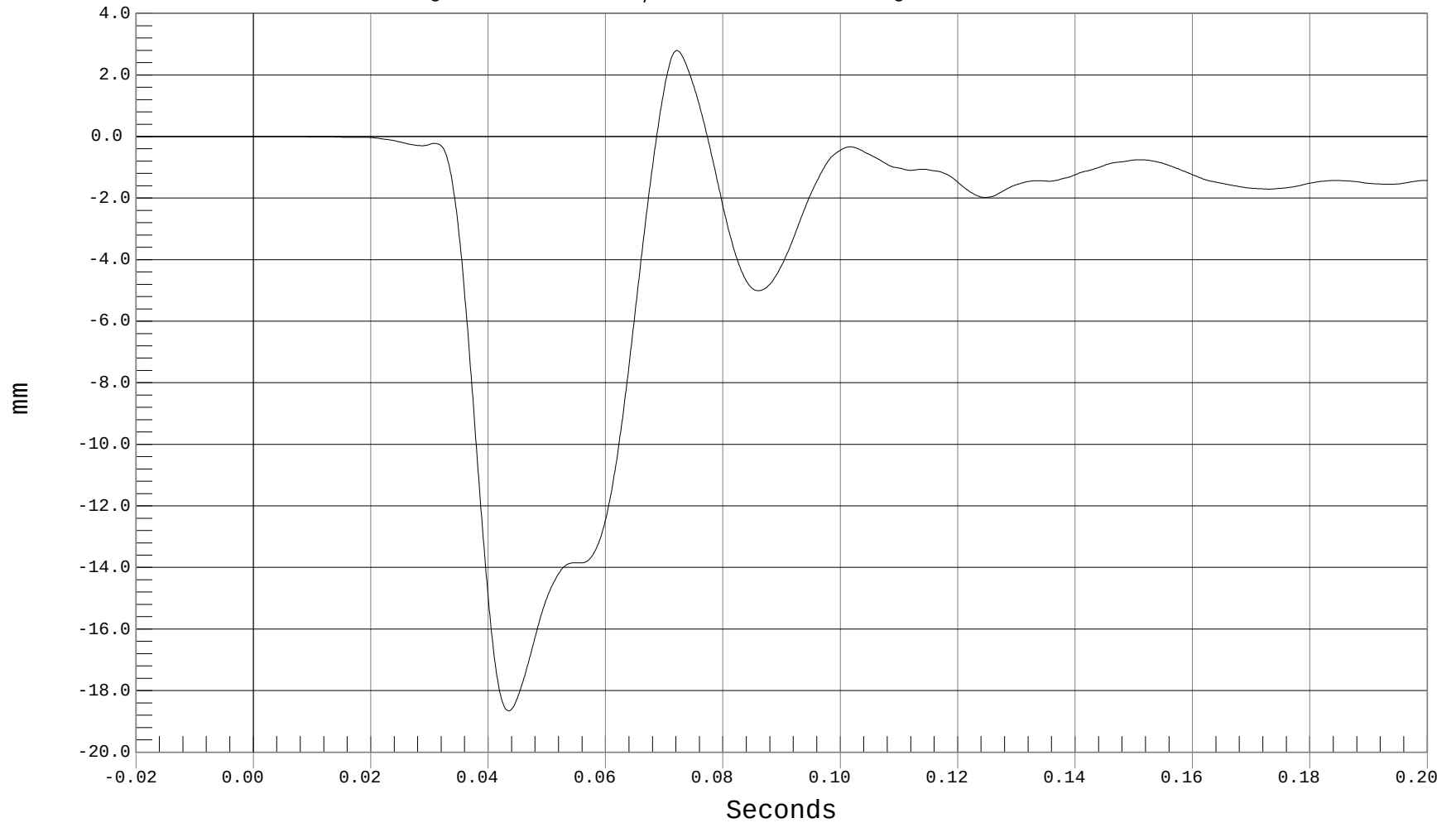
PASSENGER LOWER RIB DISPLACEMENT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 REAR PASSENGER LOWER RIB DISPLACEMENT, B01110DF.D88

Ymin = -18.66 mm @ 0.0434 Seconds, Ymax = 2.79 mm @ 0.0721 Seconds





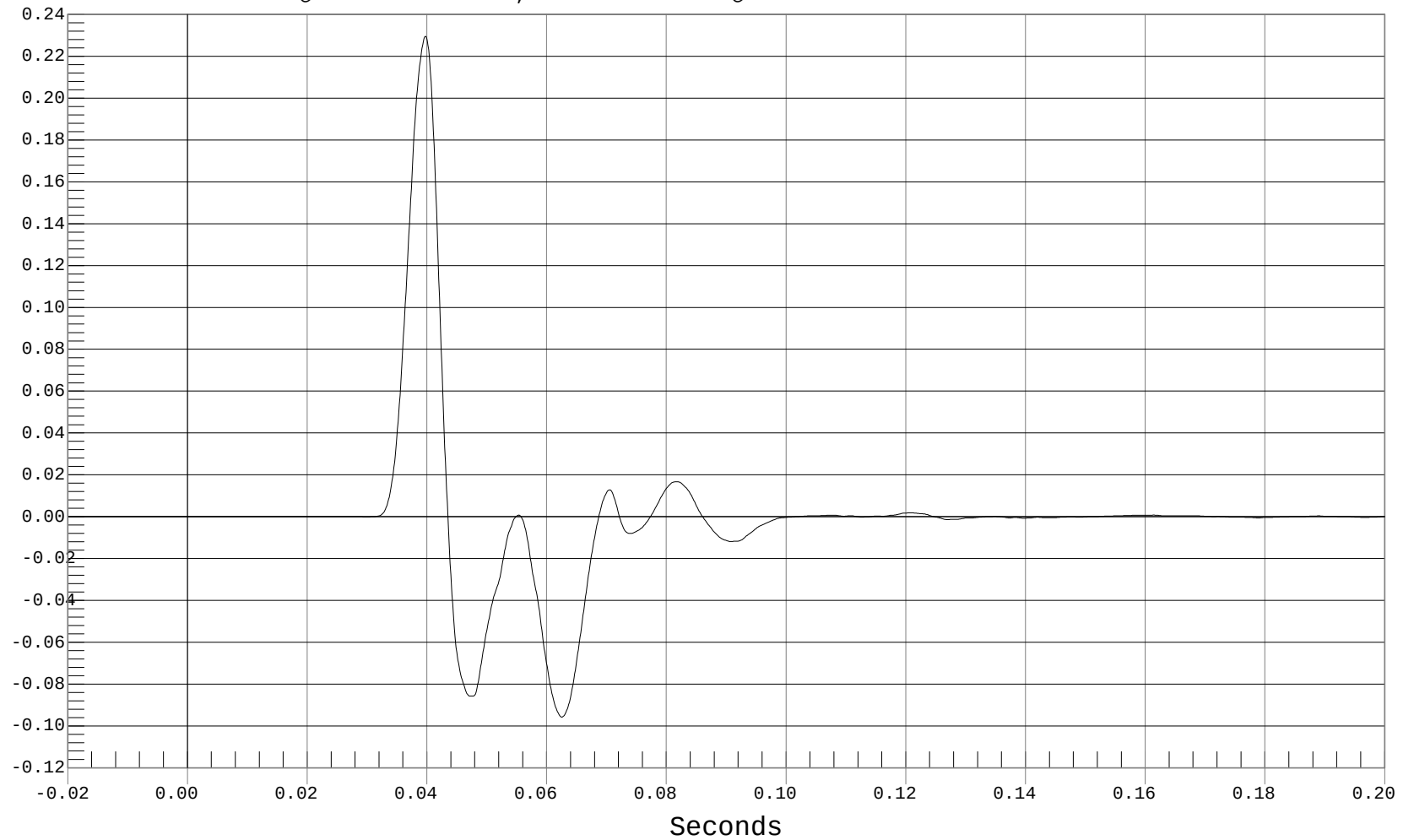
PASSENGER LOWER RIB VISCOUS CRITERIA

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 Viscous Criterion, B01110DV.C88

Ymin = -.1 @ 0.0625 Seconds, Ymax = .23 @ 0.0397 Seconds





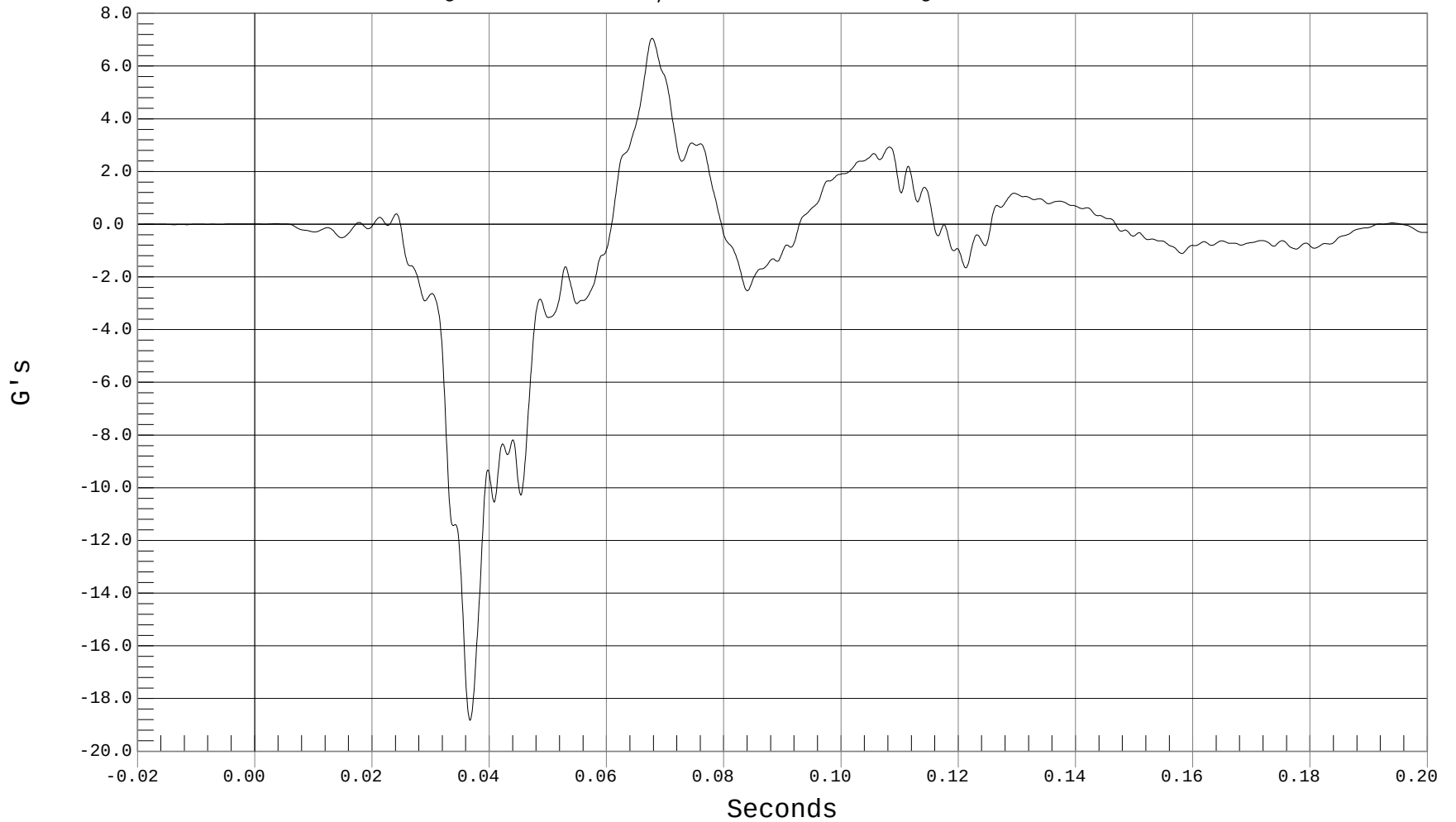
PASSENGER LOWER SPINE X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 REAR PASSENGER LOWER SPINE X, B01110AF.A89

Ymin = -18.83 G's @ 0.0366 Seconds, Ymax = 7.05 G's @ 0.0677 Seconds





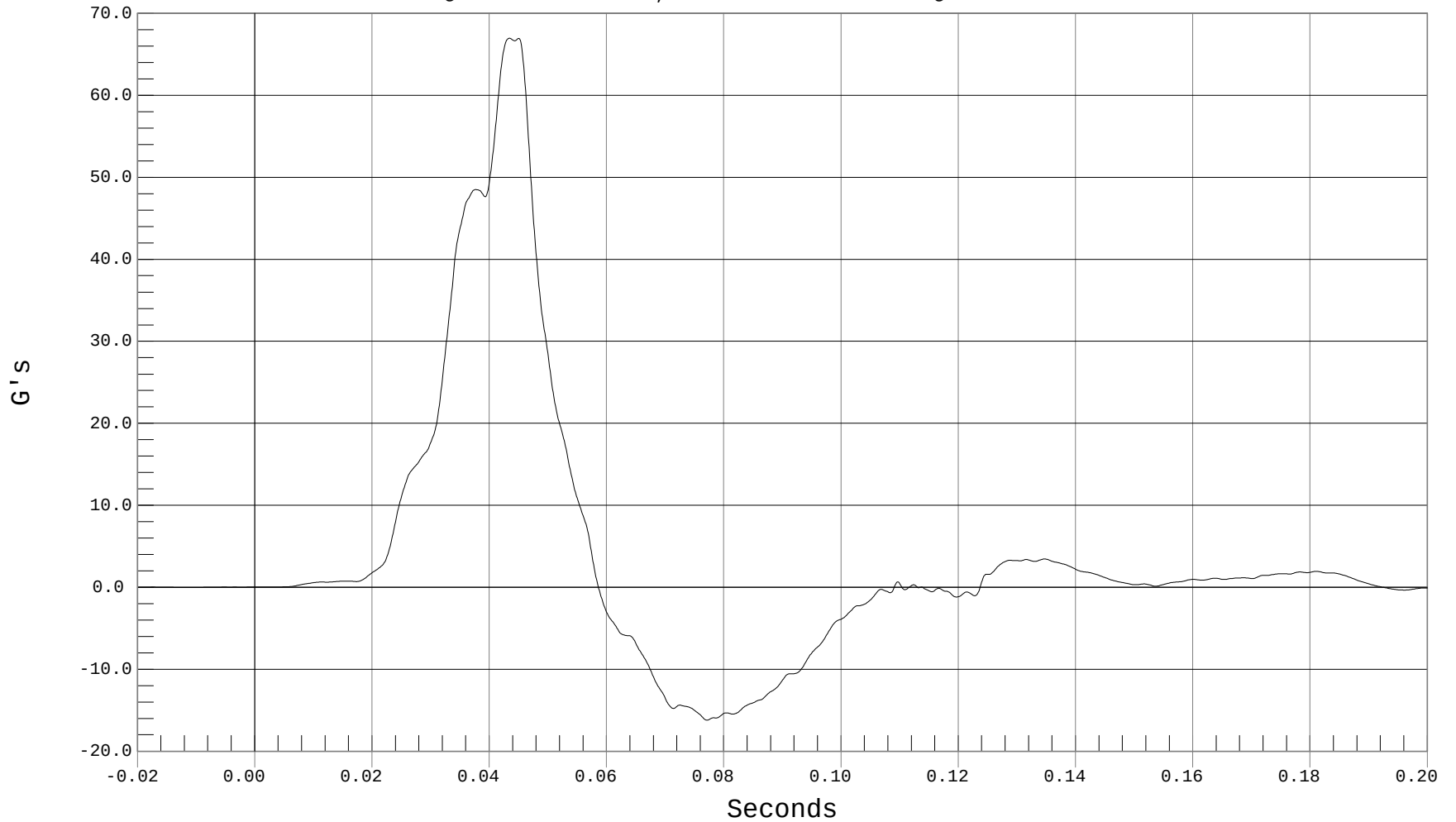
PASSENGER LOWER SPINE Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 REAR PASSENGER LOWER SPINE Y, B01110AF.A90

Ymin = -16.22 G's @ 0.0770 Seconds, Ymax = 66.96 G's @ 0.0433 Seconds





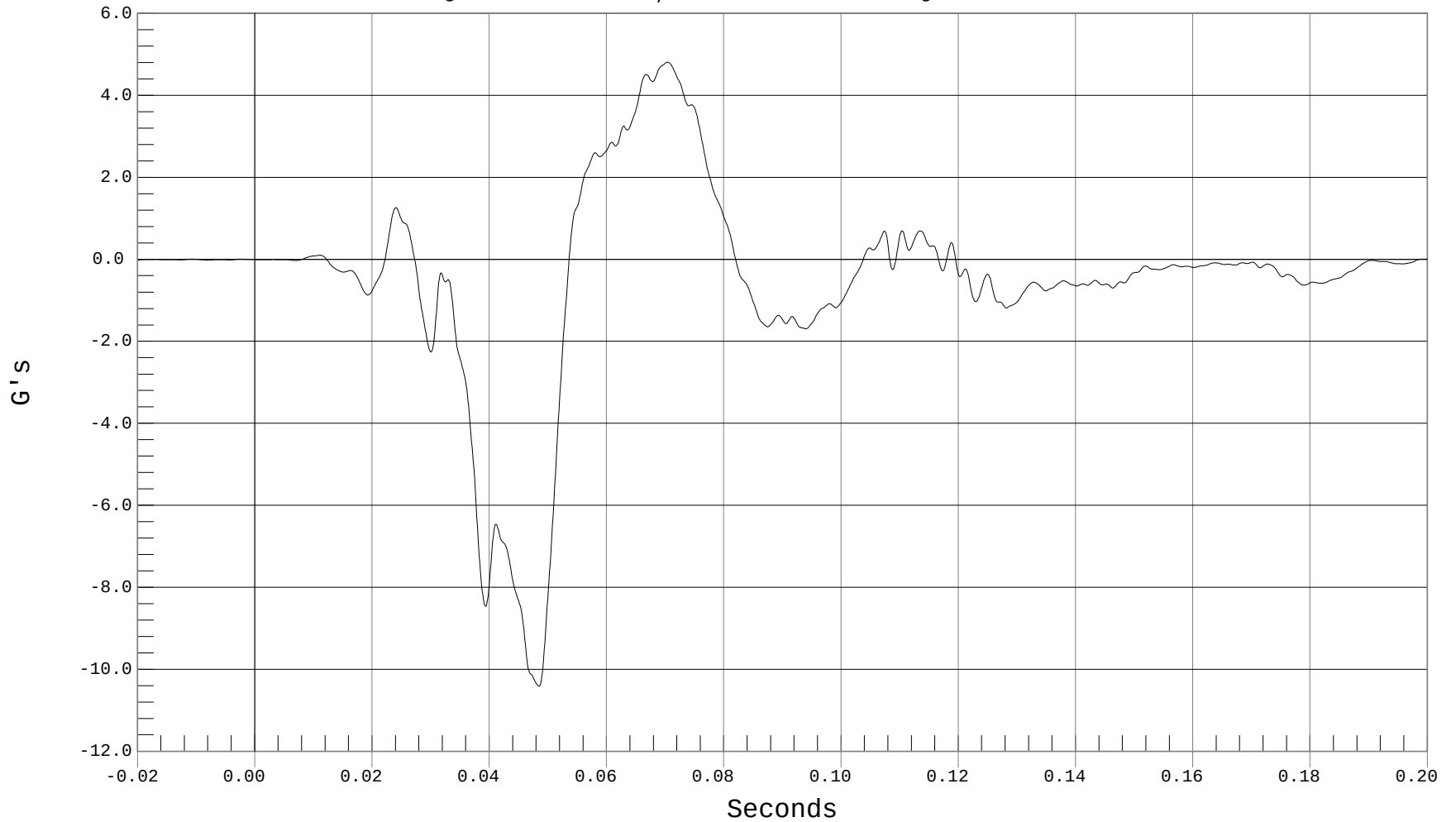
PASSENGER LOWER SPINE Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 REAR PASSENGER LOWER SPINE Z, B01110AF.A91

Ymin = -10.41 G's @ 0.0484 Seconds, Ymax = 4.81 G's @ 0.0703 Seconds





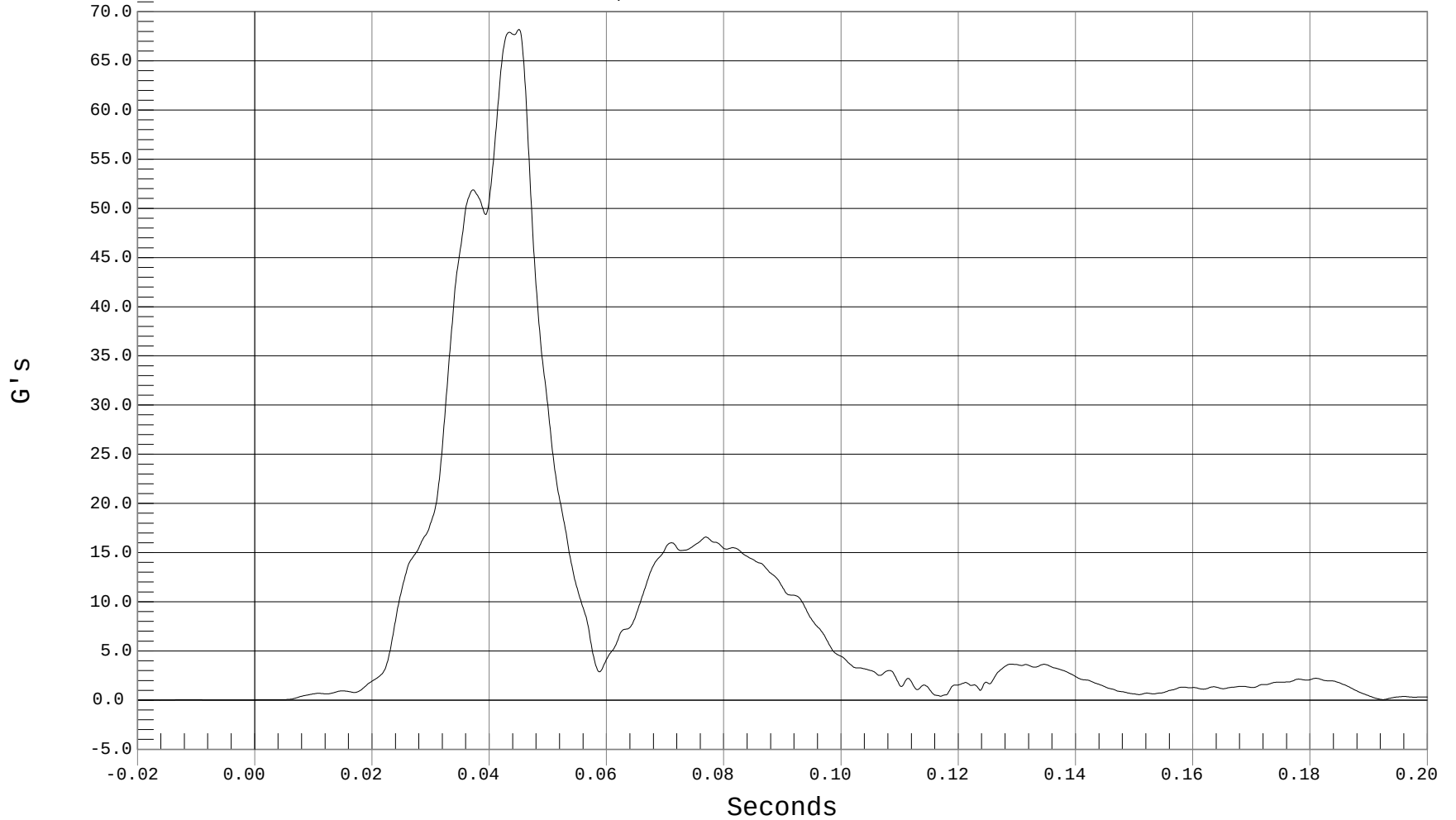
PASSENGER LOWER SPINE RESULTANT ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 180

— 1 PASSENGER LOWER SPINE RESULTANT, B01110AV.A89

Ymin = 0 G's @ -0.0163 Seconds, Ymax = 68.2 G's @ 0.0450 Seconds





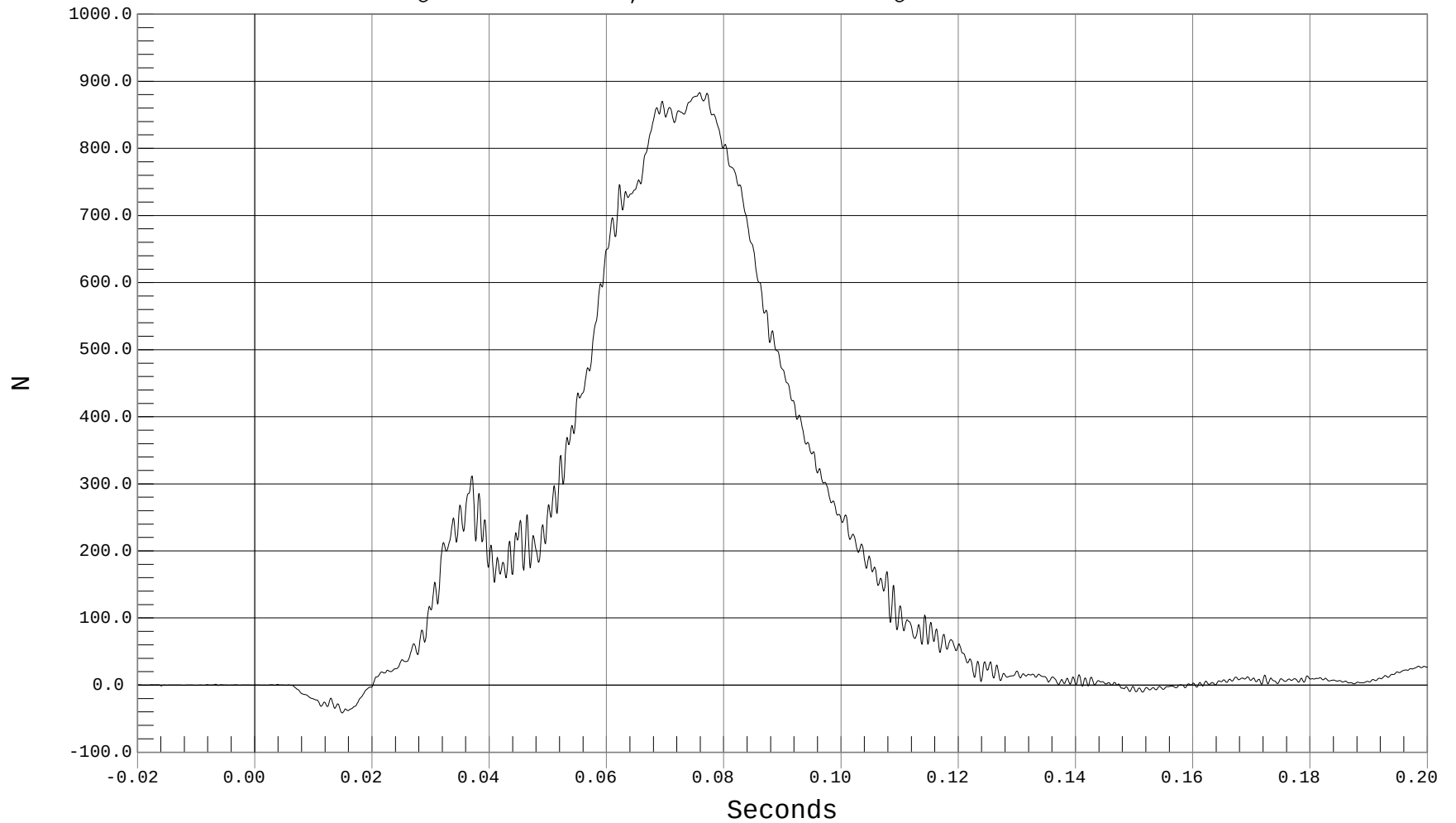
PASSENGER TORSO FORCE X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER TORSO FORCE X, B01110FF.F55

Ymin = -41.43 N @ 0.0148 Seconds, Ymax = 883.07 N @ 0.0758 Seconds





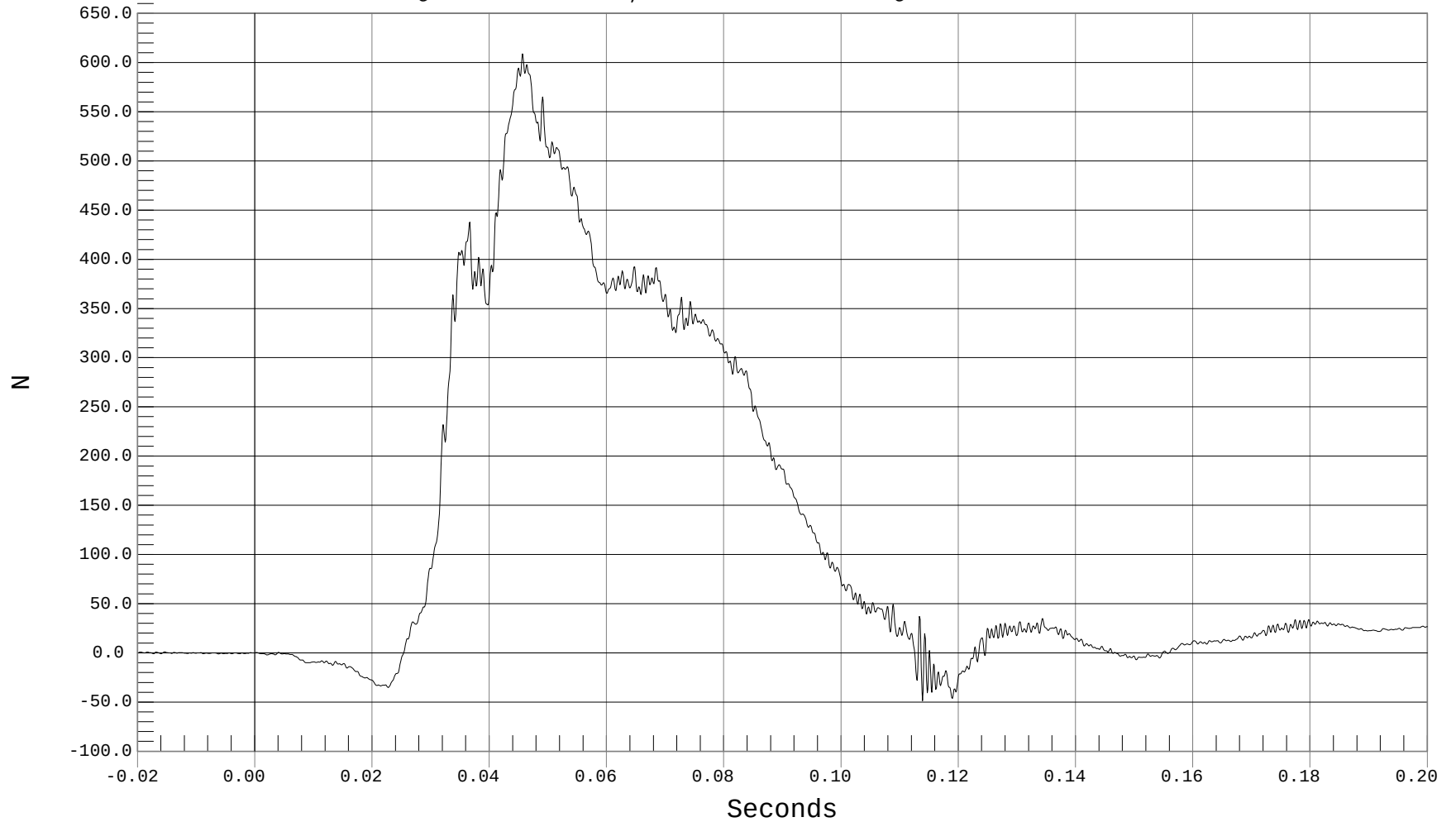
PASSENGER TORSO FORCE Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER TORSO FORCE Y, B01110FF.F56

Ymin = -48.69 N @ 0.1138 Seconds, Ymax = 608.96 N @ 0.0456 Seconds





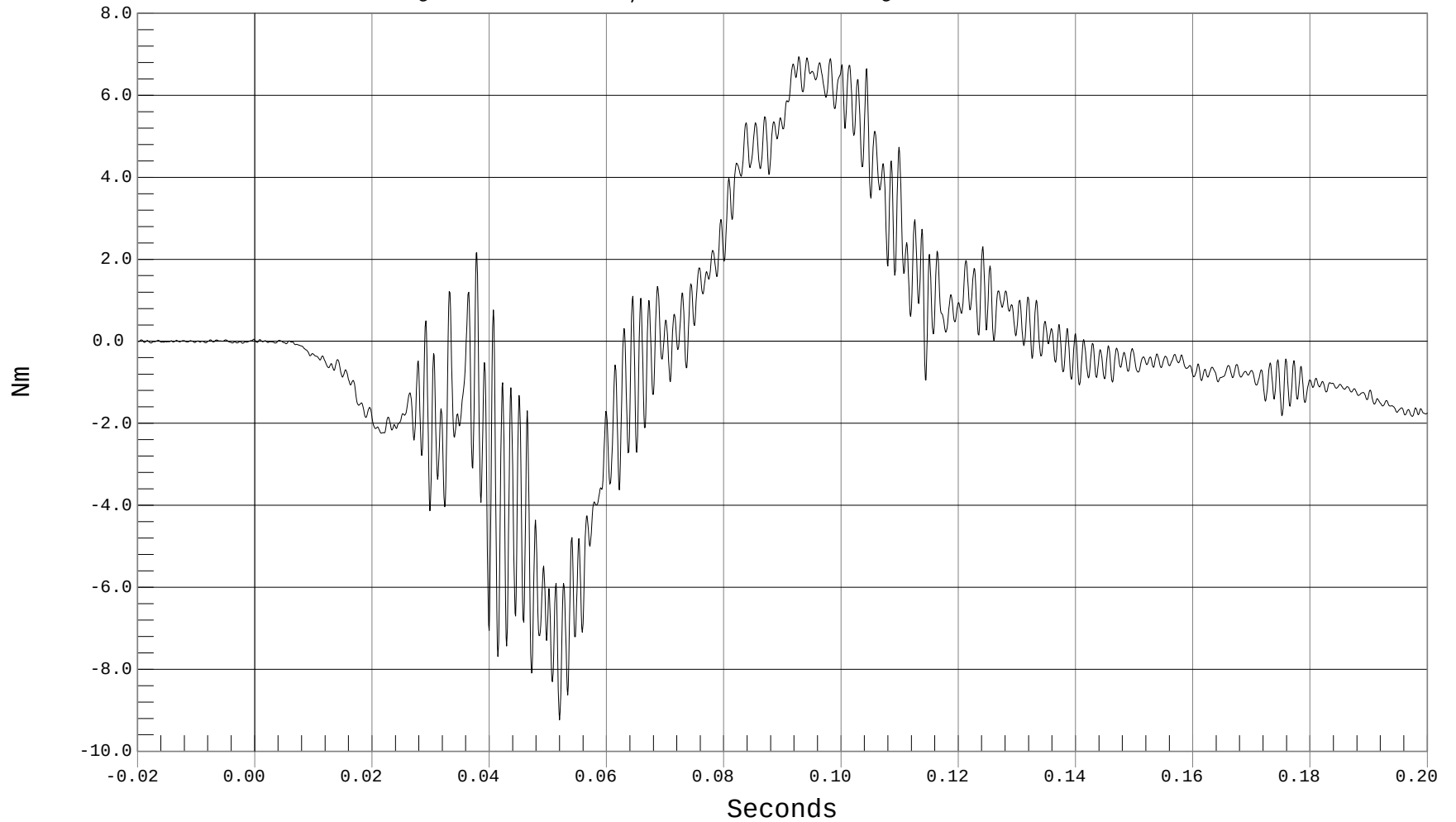
PASSENGER TORSO MOMENT Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER TORSO MOMENT Y, B01110FF.F57

Ymin = -9.23 Nm @ 0.0519 Seconds, Ymax = 6.94 Nm @ 0.0927 Seconds





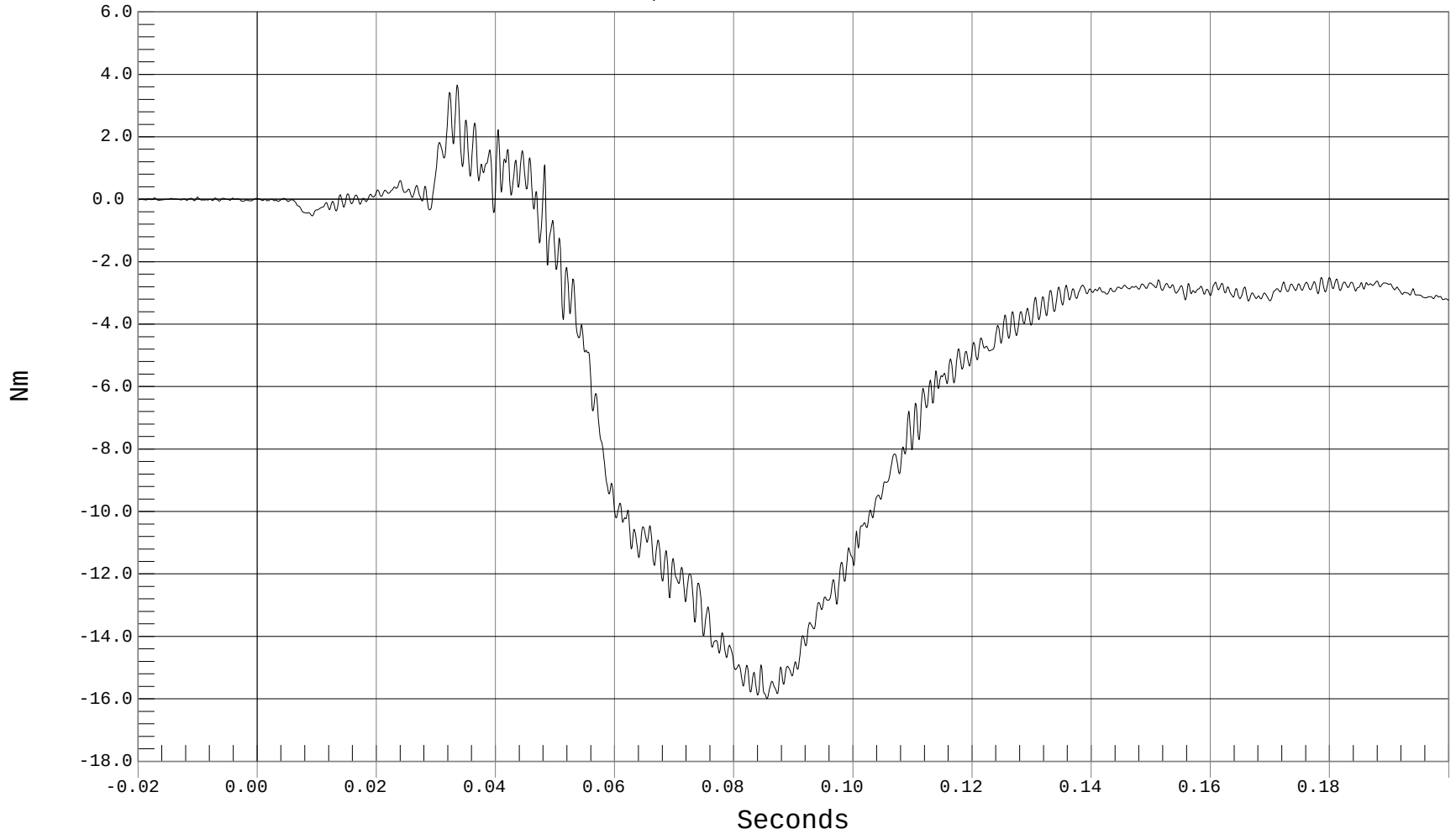
PASSENGER TORSO MOMENT Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER TORSO MOMENT Z, B01110MF.M58

Ymin = -15.99 Nm @ 0.0855 Seconds, Ymax = 3.66 Nm @ 0.0335 Seconds





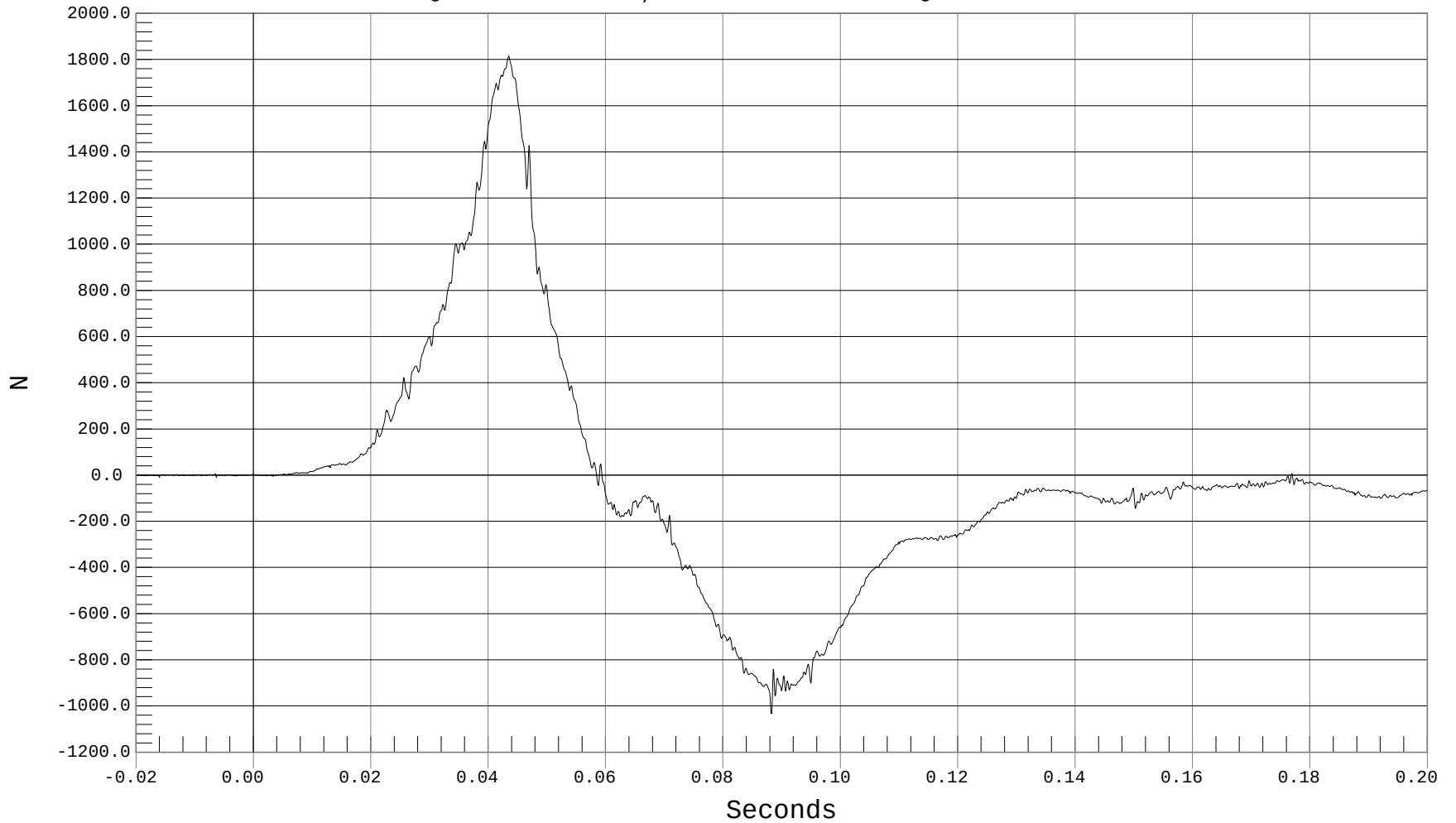
PASSENGER LUMBAR FORCE Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER LUMBAR FORCE Y, B01110FT.F59

Ymin = -1033.1 N @ 0.0882 Seconds, Ymax = 1815.12 N @ 0.0434 Seconds





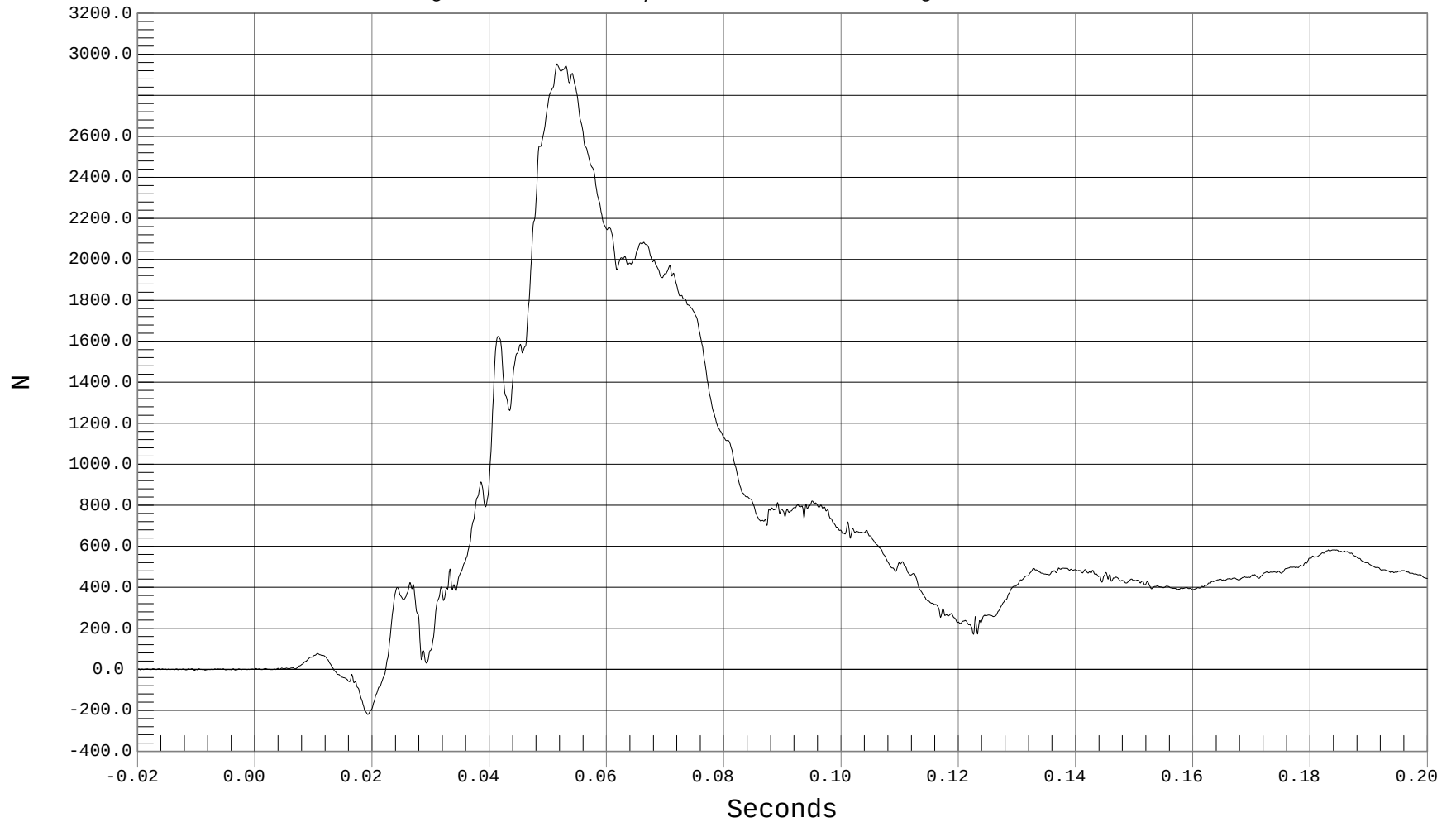
PASSENGER LUMBAR FORCE Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER LUMBAR FORCE Z, B01110FT.F60

Ymin = -220.75 N @ 0.0192 Seconds, Ymax = 2953.78 N @ 0.0515 Seconds





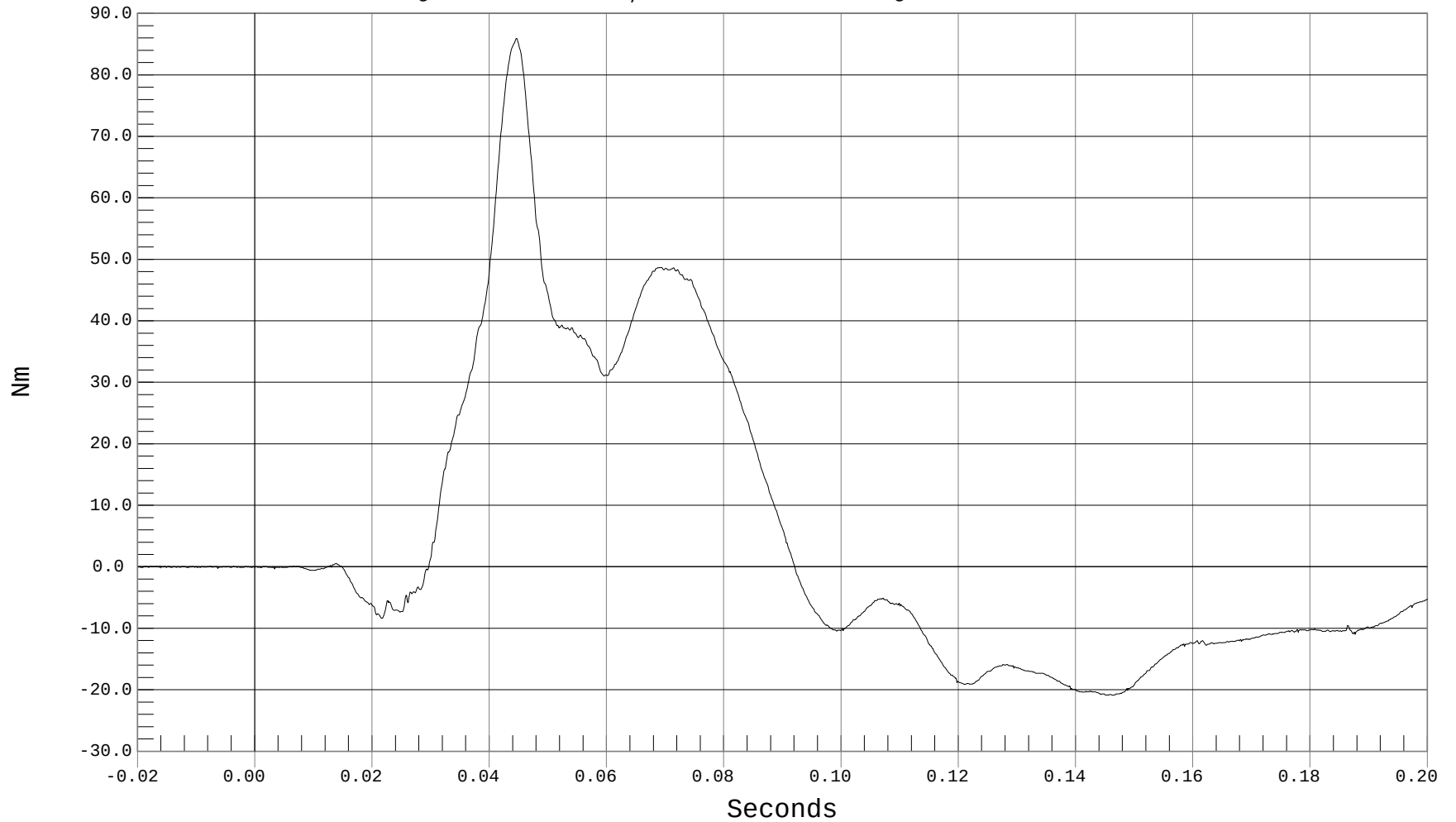
PASSENGER LUMBAR MOMENT X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER LUMBAR MOMENT X, B01110MT.M61

Ymin = -20.9 Nm @ 0.1455 Seconds, Ymax = 85.94 Nm @ 0.0445 Seconds





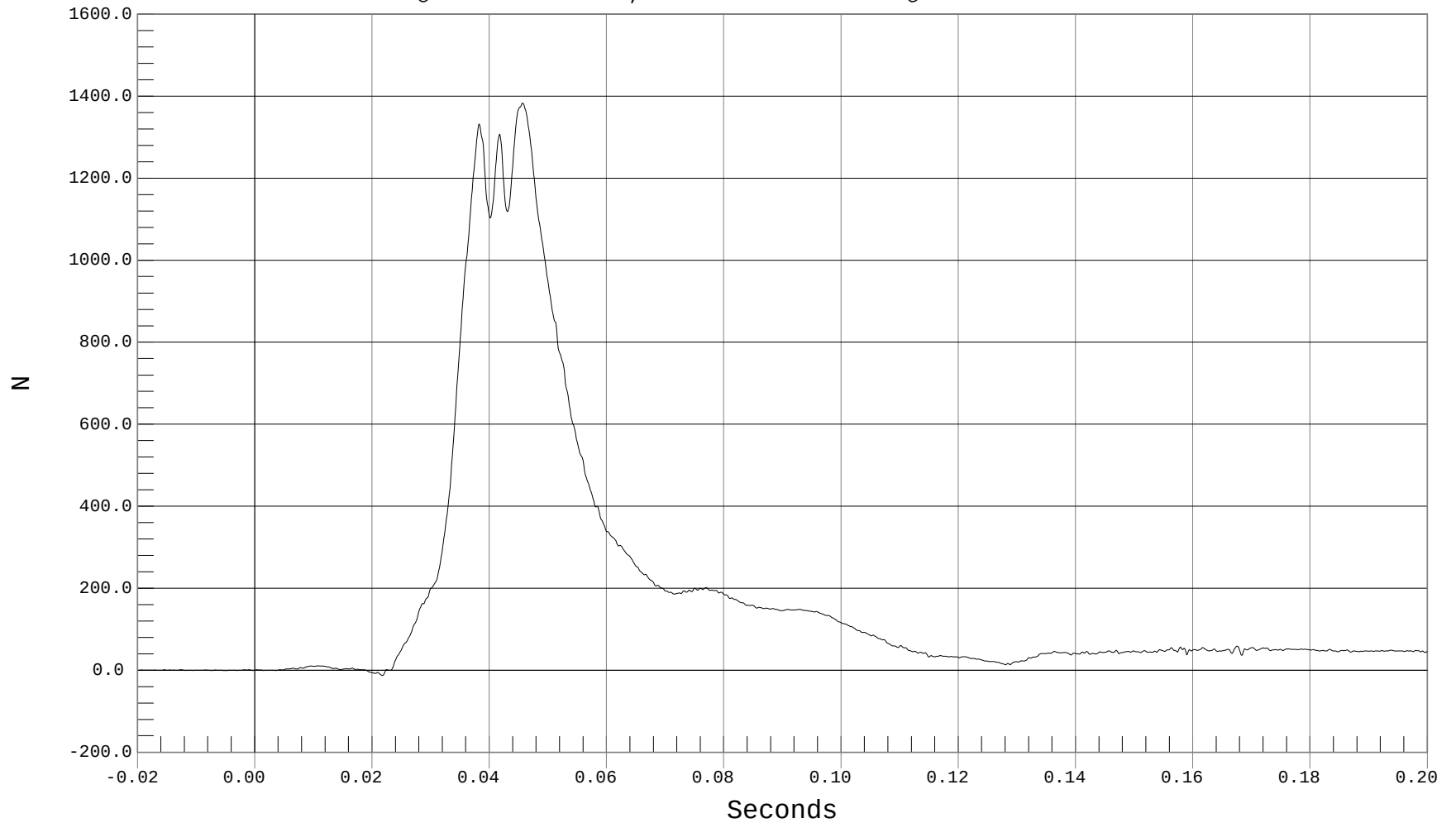
PASSENGER ABDOMEN FRONT FORCE

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER FRONT ABDOMEN FORCE, B01110FF.F06

Ymin = -12.89 N @ 0.0217 Seconds, Ymax = 1383.36 N @ 0.0456 Seconds





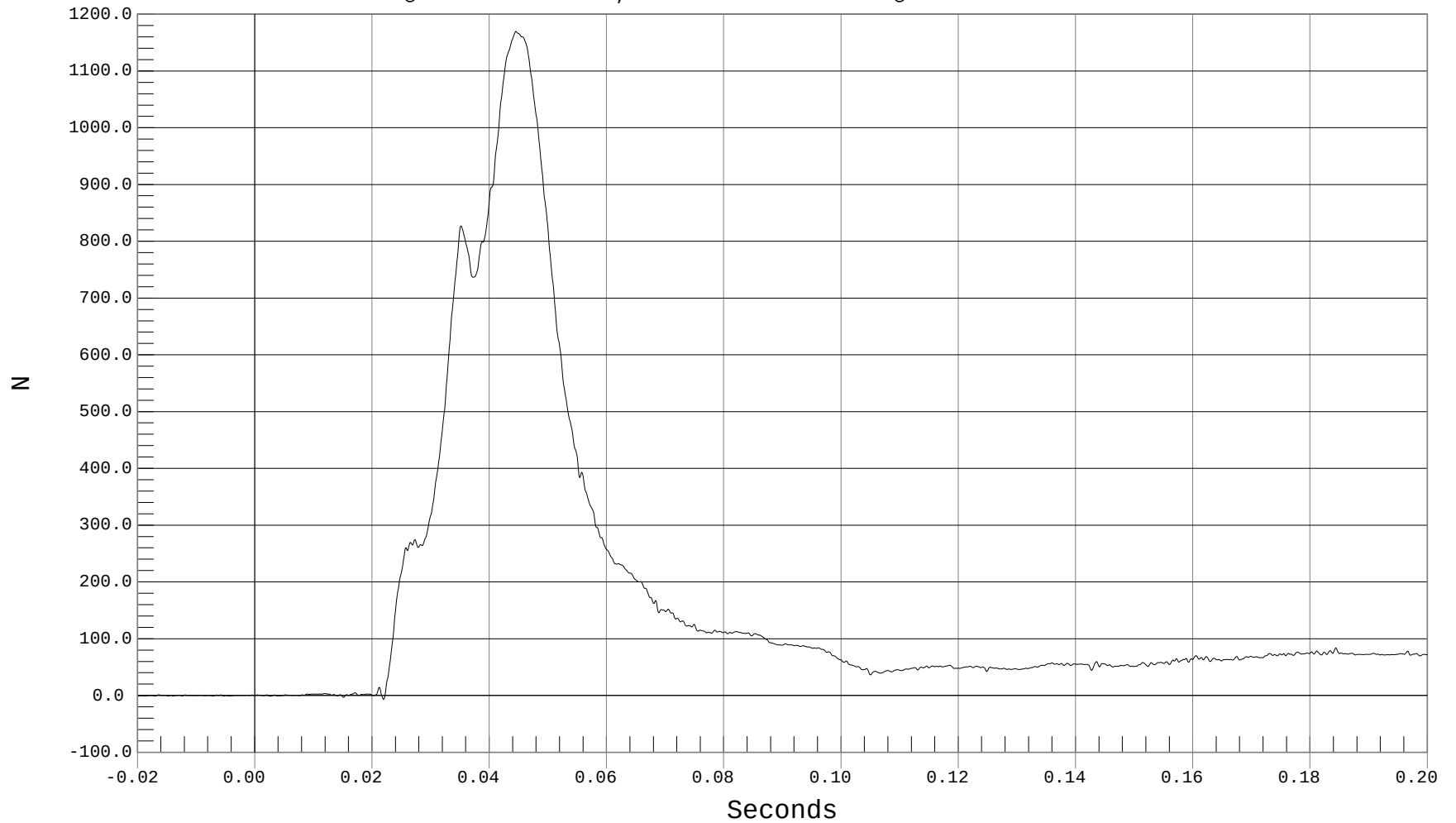
PASSENGER ABDOMEN MID FORCE

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER MID ABDOMEN FORCE, B01110FF.F07

Ymin = -6.83 N @ 0.0219 Seconds, Ymax = 1169.68 N @ 0.0444 Seconds





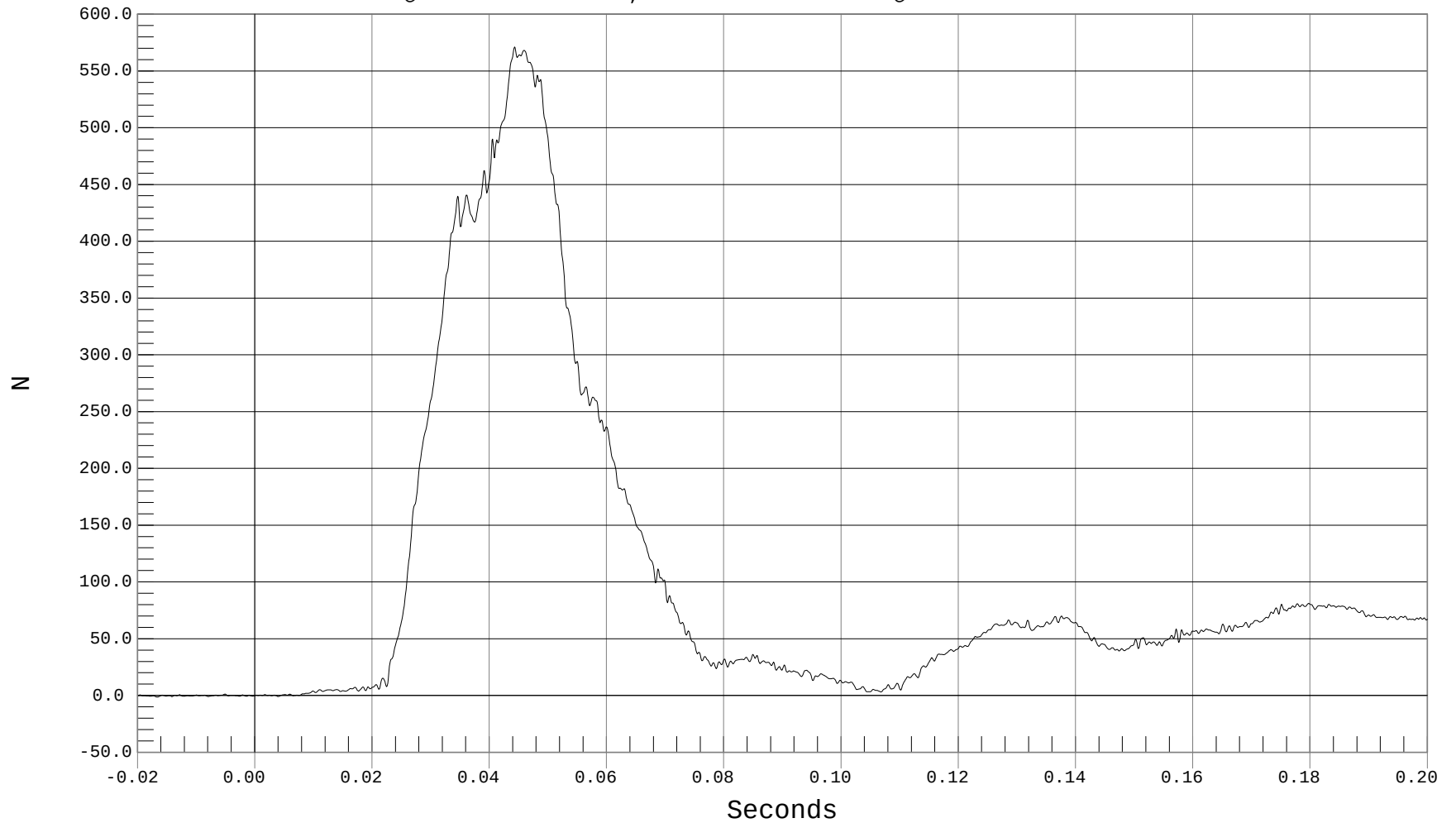
PASSENGER ABDOMEN REAR FORCE

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER REAR ABDOMEN FORCE, B01110FF.F08

Ymin = -1.38 N @ -0.0167 Seconds, Ymax = 571.06 N @ 0.0442 Seconds





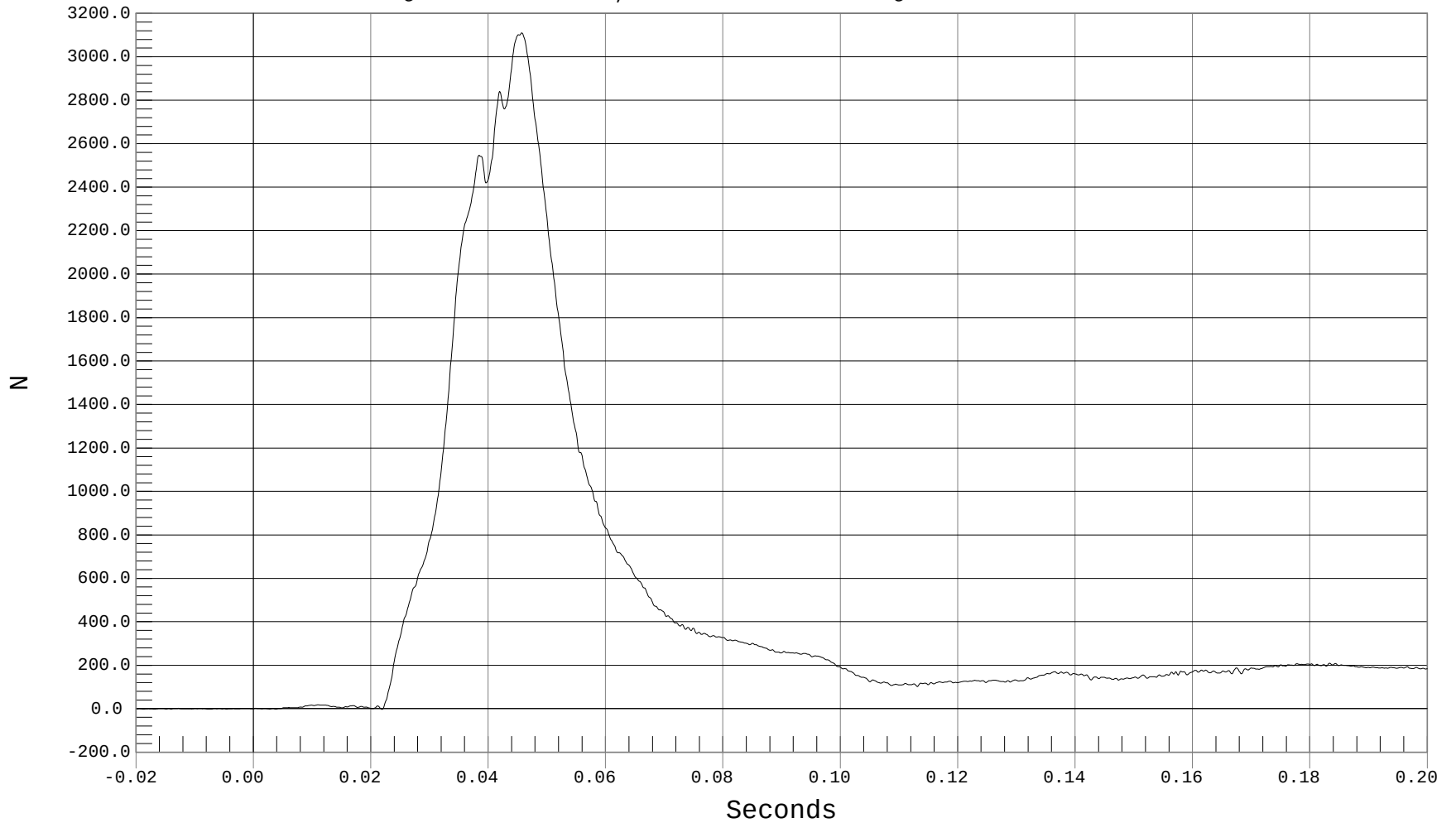
PASSENGER SUMMED ABDOMEN FORCE

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 PASSENGER SUMMED ABDOMEN FORCE, B01110FU.F06

Ymin = -3.23 N @ 0.0218 Seconds, Ymax = 3109.65 N @ 0.0457 Seconds





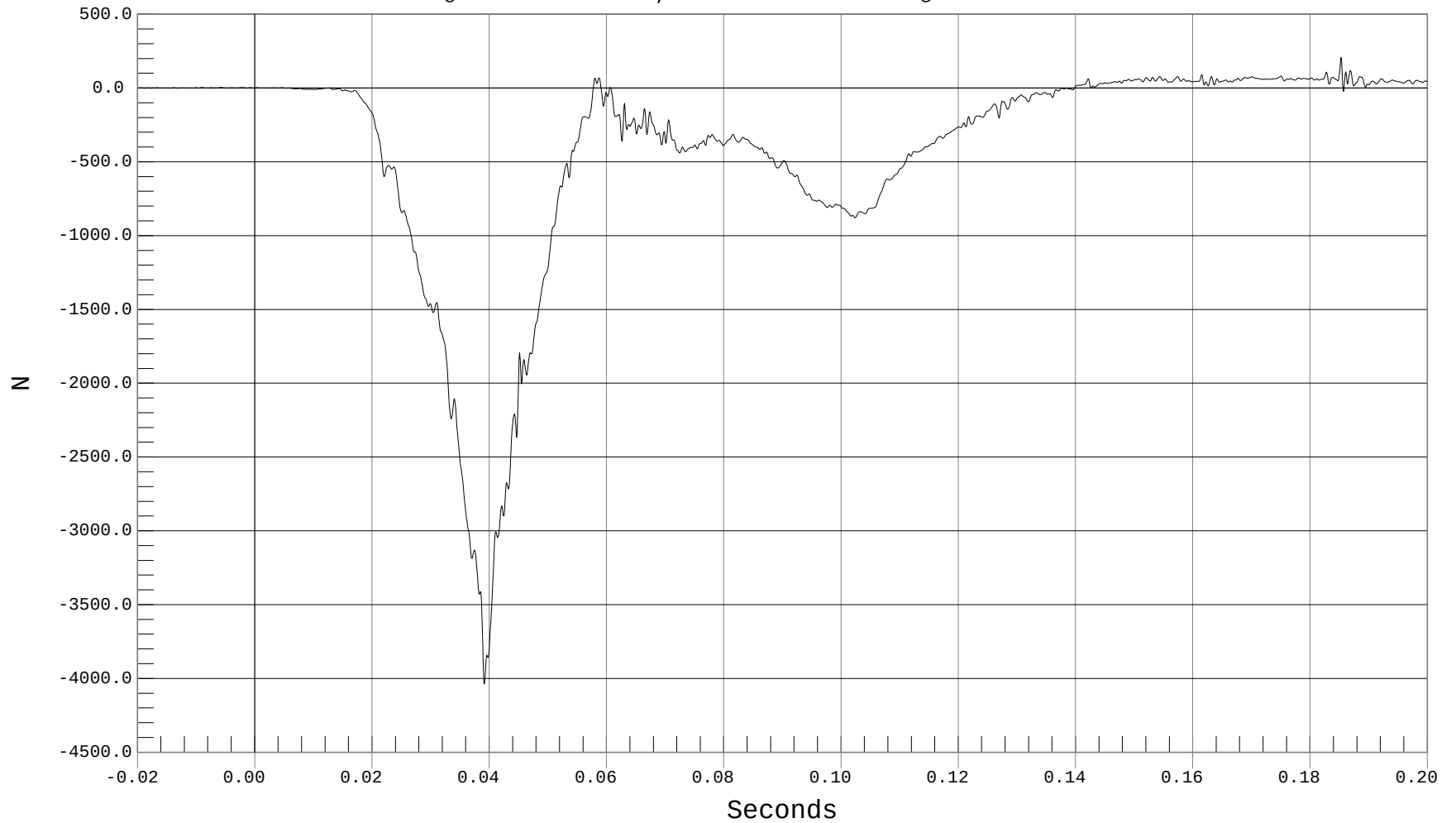
PASSENGER PUBIC SYMPHYSIS FORCE

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER PUBIC SYMPHYSIS FORC, B01110FF.F09

Ymin = -4038.15 N @ 0.0391 Seconds, Ymax = 206.25 N @ 0.1852 Seconds





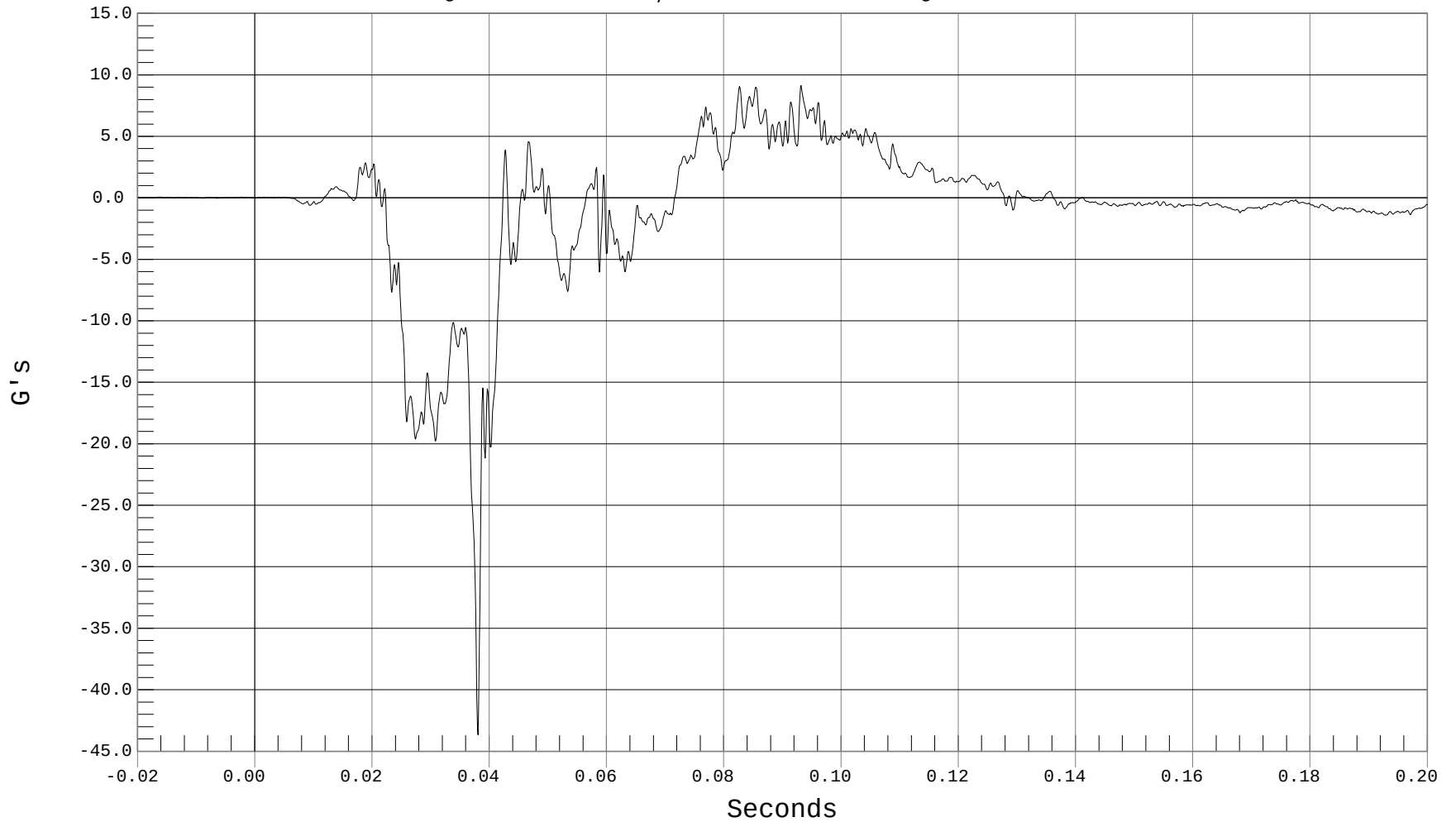
PASSENGER PELVIS X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER PELVIS X, B01110AT.A10

Ymin = -43.68 G's @ 0.0380 Seconds, Ymax = 9.14 G's @ 0.0931 Seconds





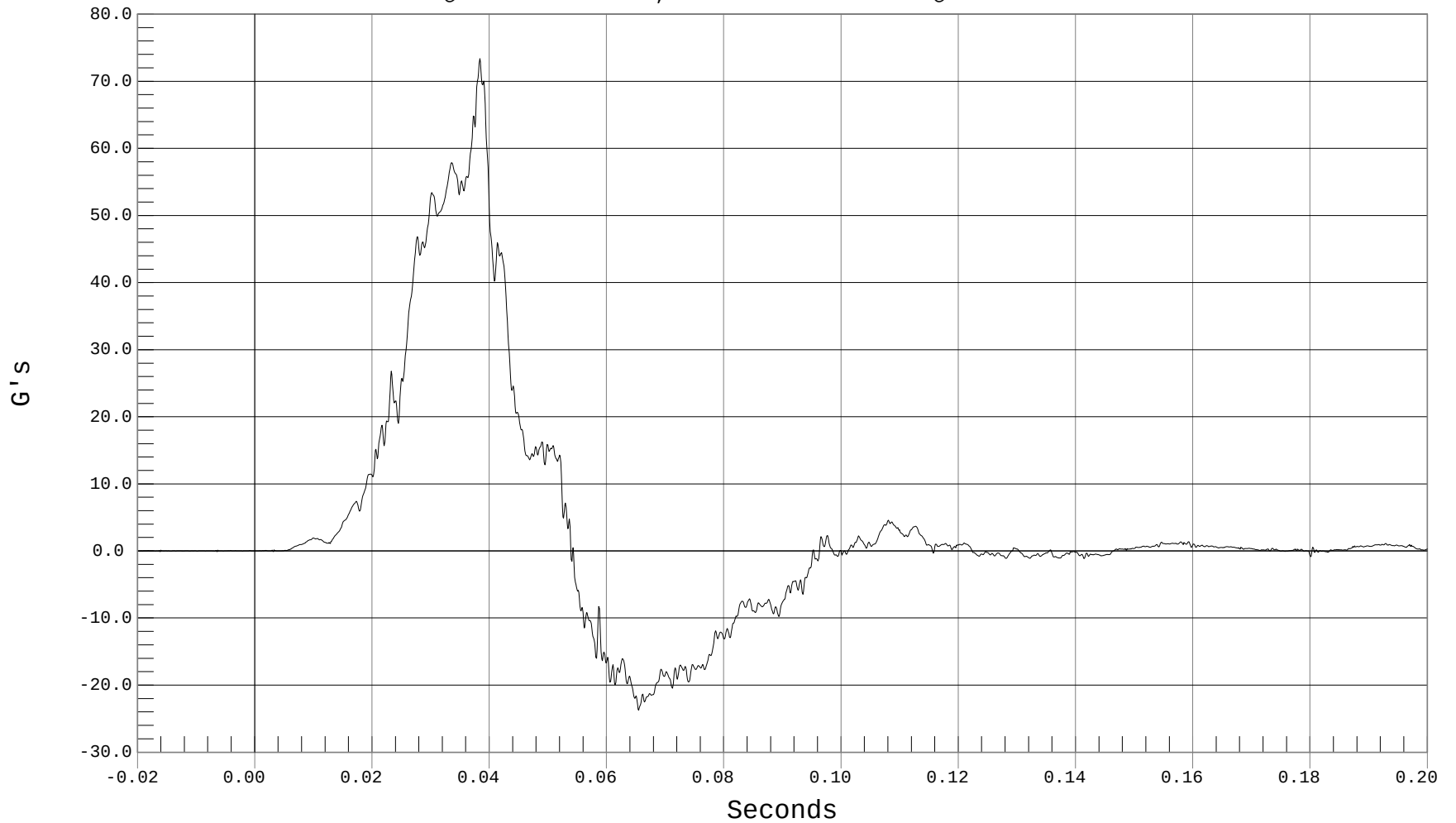
PASSENGER PELVIS Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER PELVIS Y, B01110AT.A11

Ymin = -23.75 G's @ 0.0654 Seconds, Ymax = 73.39 G's @ 0.0383 Seconds





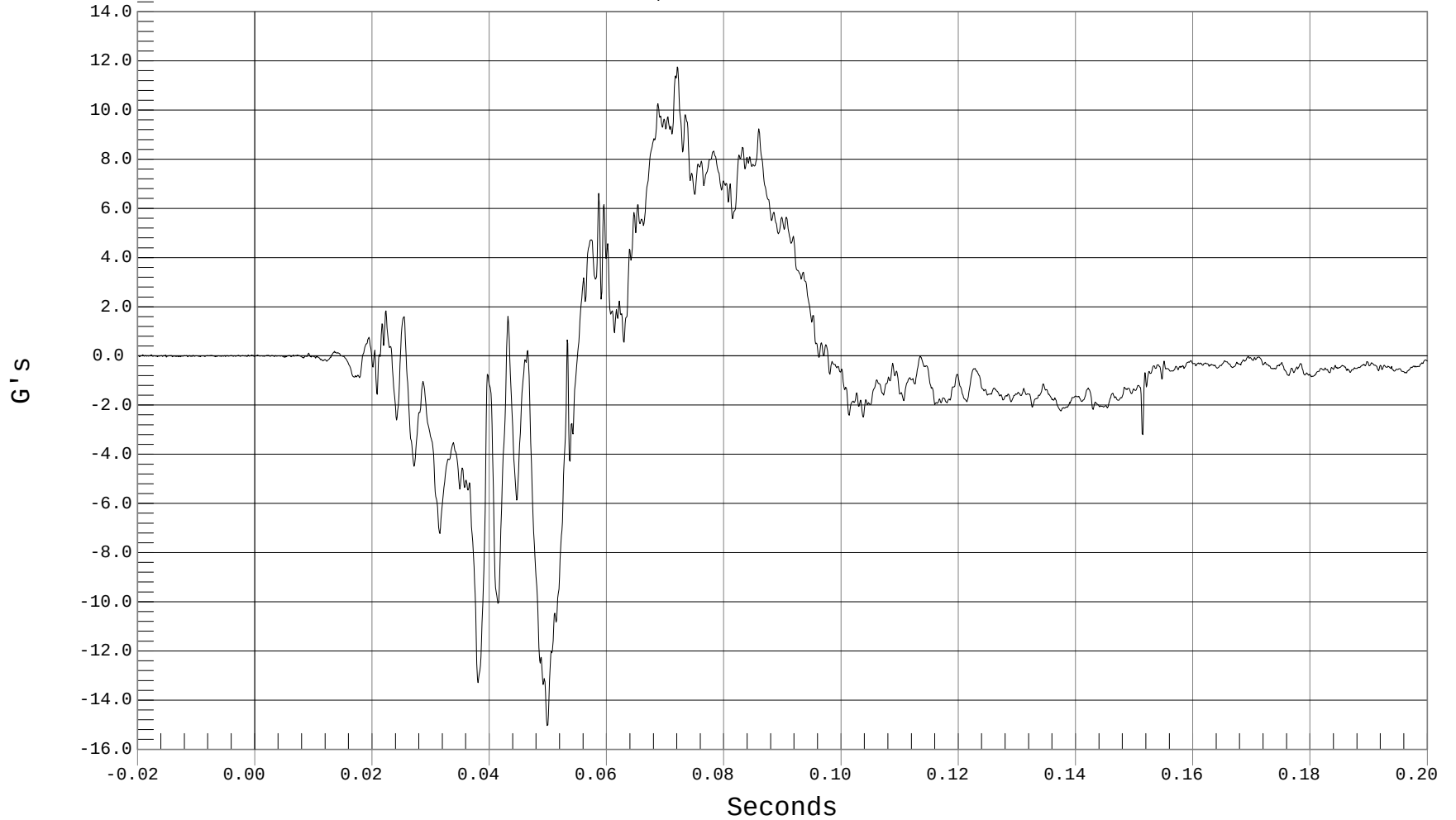
PASSENGER PELVIS Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER PELVIS Z, B01110AT.A12

Ymin = -15.03 G's @ 0.0498 Seconds, Ymax = 11.75 G's @ 0.0720 Seconds





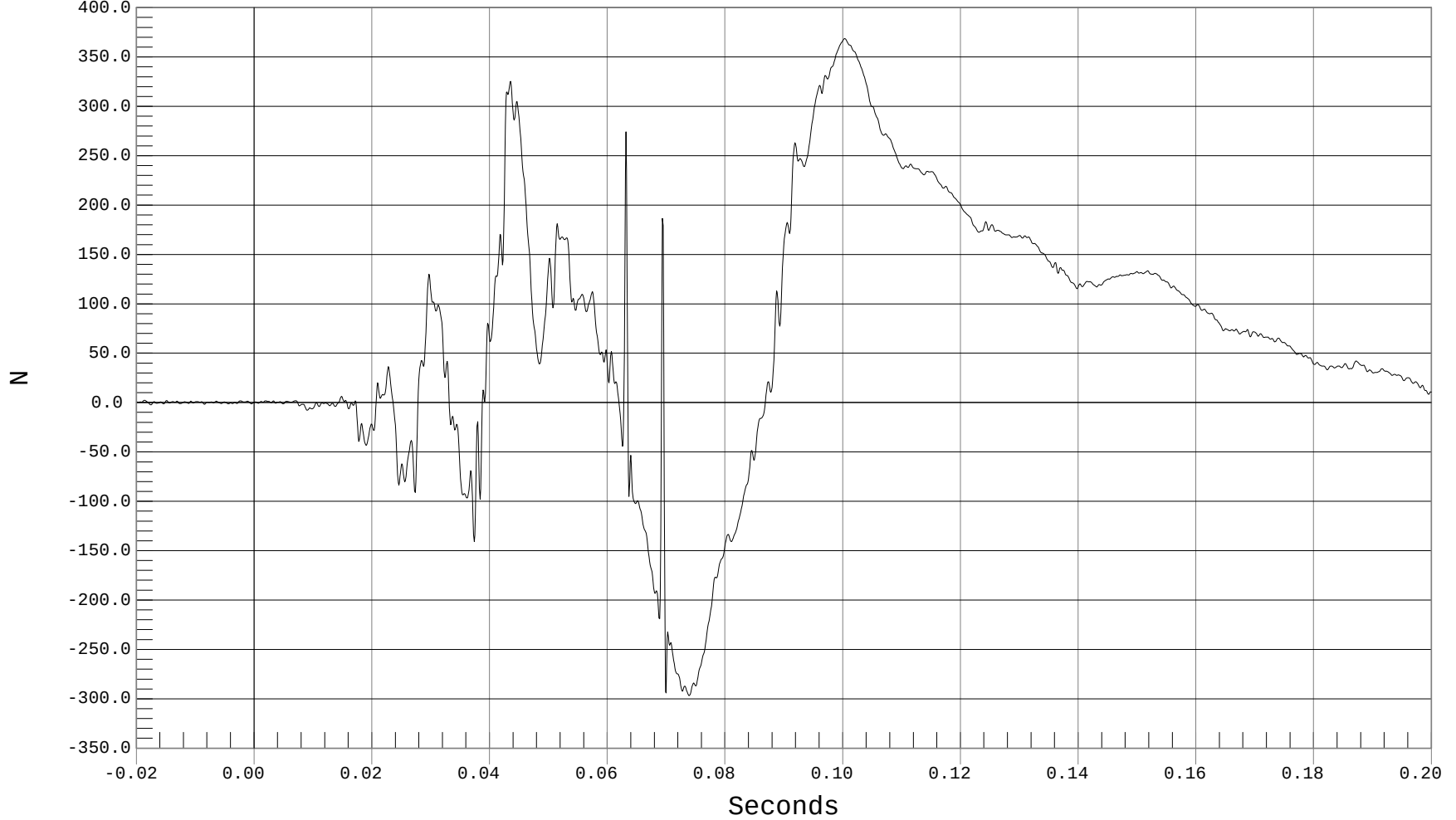
PASSENGER LEFT FEMUR FORCE X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER LEFT FEMUR FORCE X, B01110FF.F19

Ymin = -296.77 N @ 0.0738 Seconds, Ymax = 368.64 N @ 0.1003 Seconds





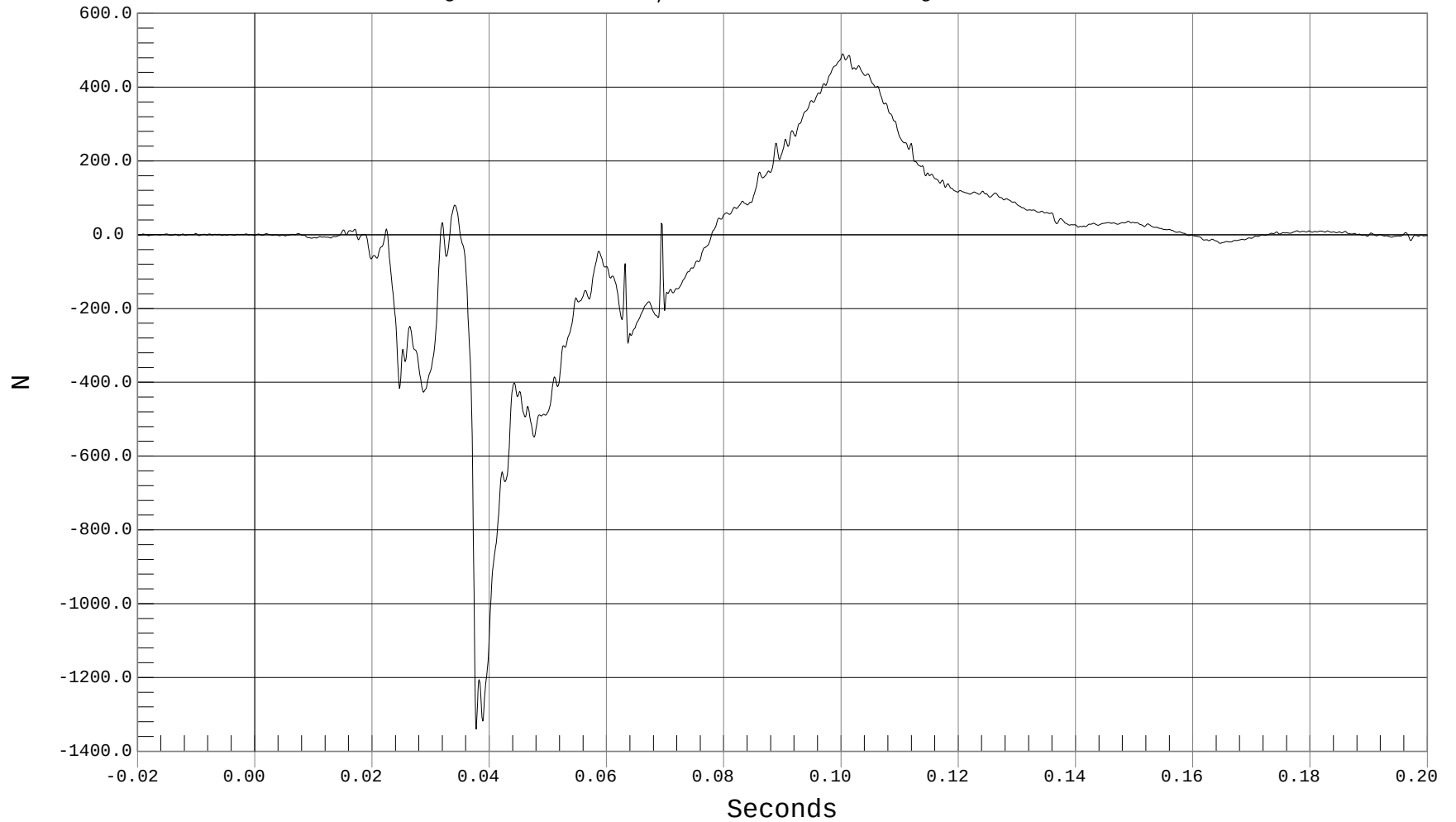
PASSENGER LEFT FEMUR FORCE Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER LEFT FEMUR FORCE Y, B01110FF.F20

Ymin = -1340.22 N @ 0.0377 Seconds, Ymax = 490.27 N @ 0.1002 Seconds





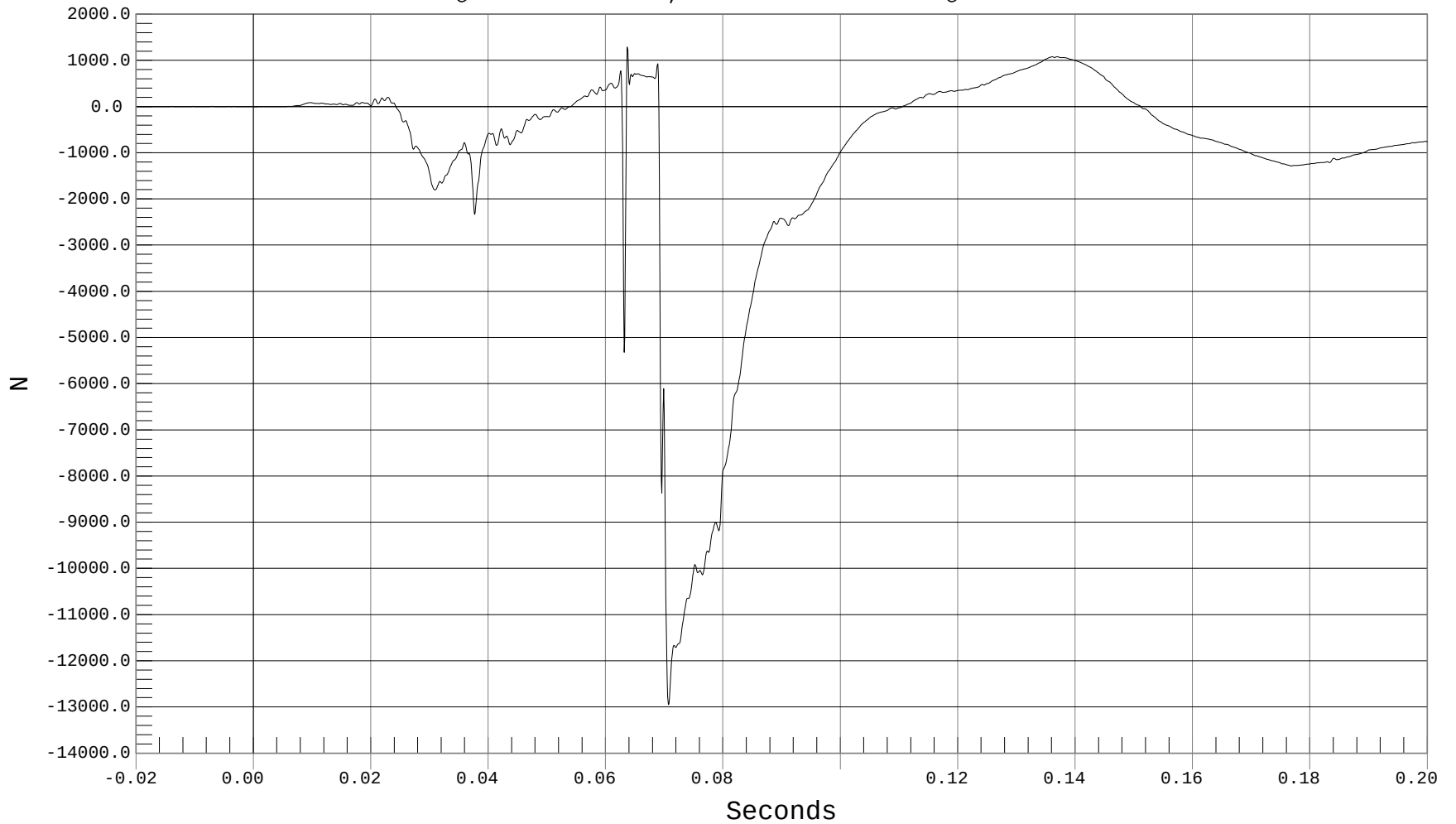
PASSENGER LEFT FEMUR FORCE Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER LEFT FEMUR FORCE Z, B01110FF.F21

Ymin = -12955.64 N @ 0.0706 Seconds, Ymax = 1288.47 N @ 0.0636 Seconds





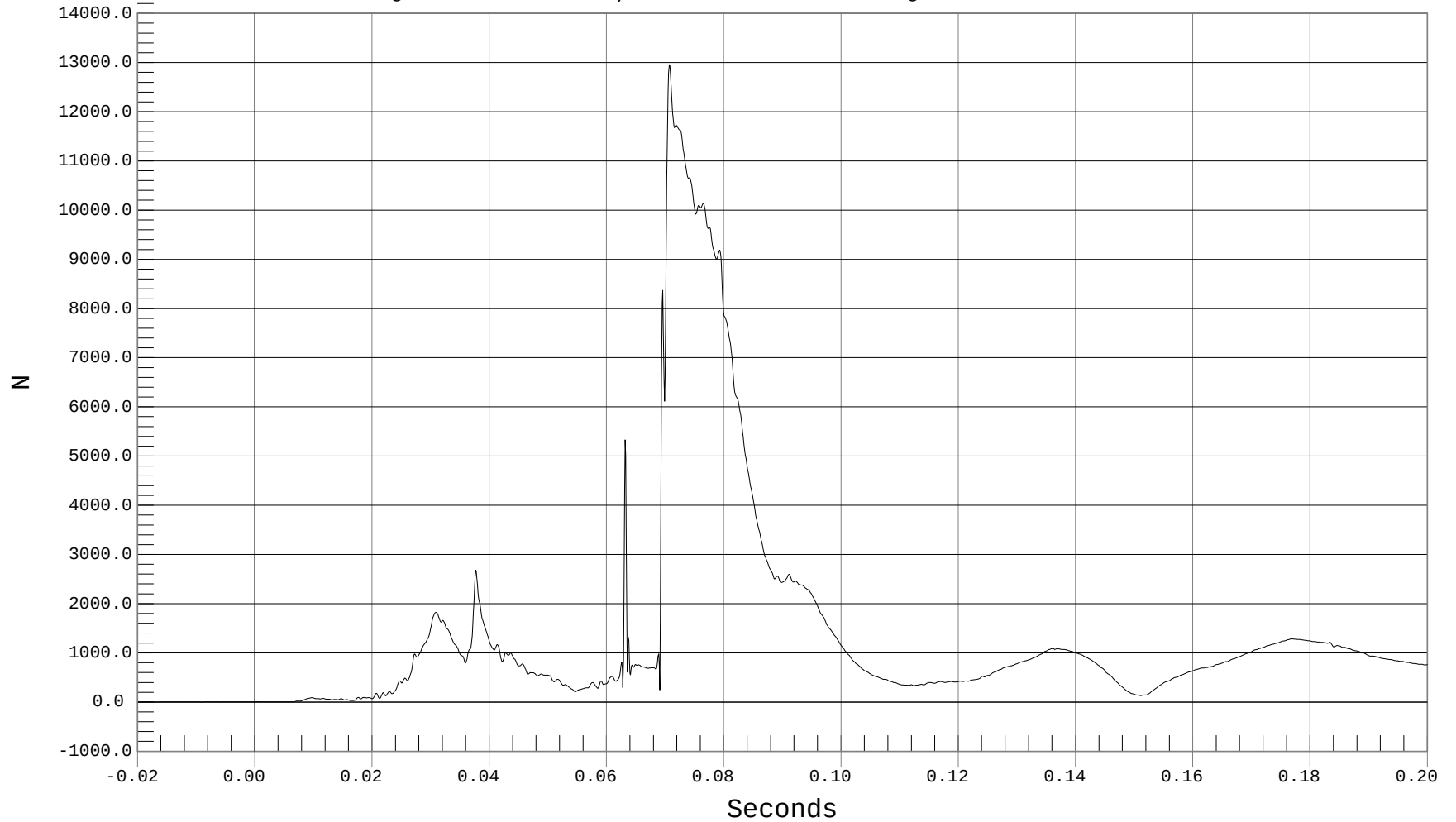
PASSENGER LEFT FEMUR FORCE RESULTANT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 PASSENGER LEFT FEMUR FORCE RESULTANT, B01110FV.F19

Ymin = .53 N @ -0.0093 Seconds, Ymax = 12958.84 N @ 0.0706 Seconds





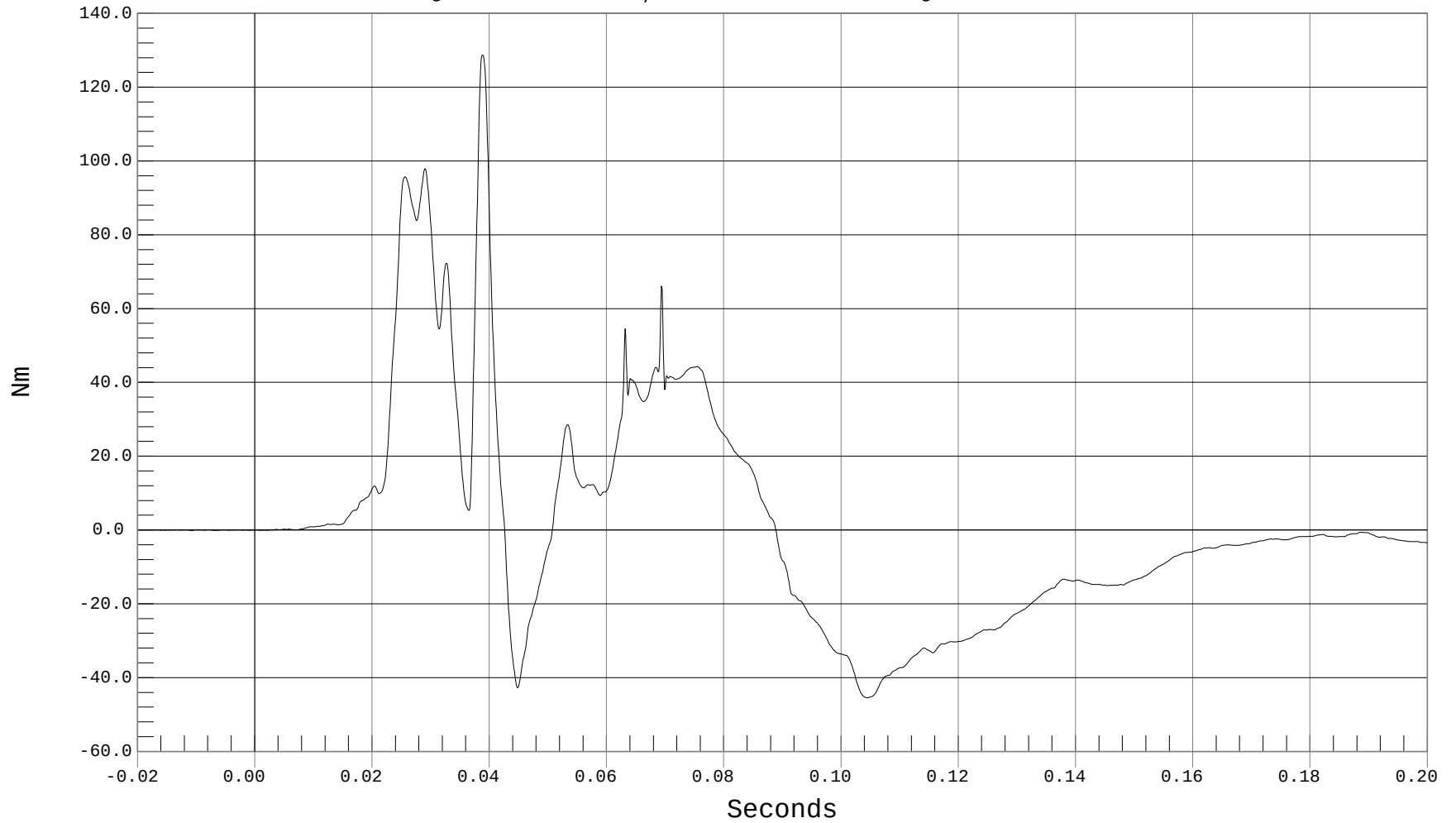
PASSENGER LEFT FEMUR MOMENT X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER LEFT FEMUR MOMENT X, B01110FF.F22

Ymin = -45.46 Nm @ 0.1043 Seconds, Ymax = 128.72 Nm @ 0.0388 Seconds





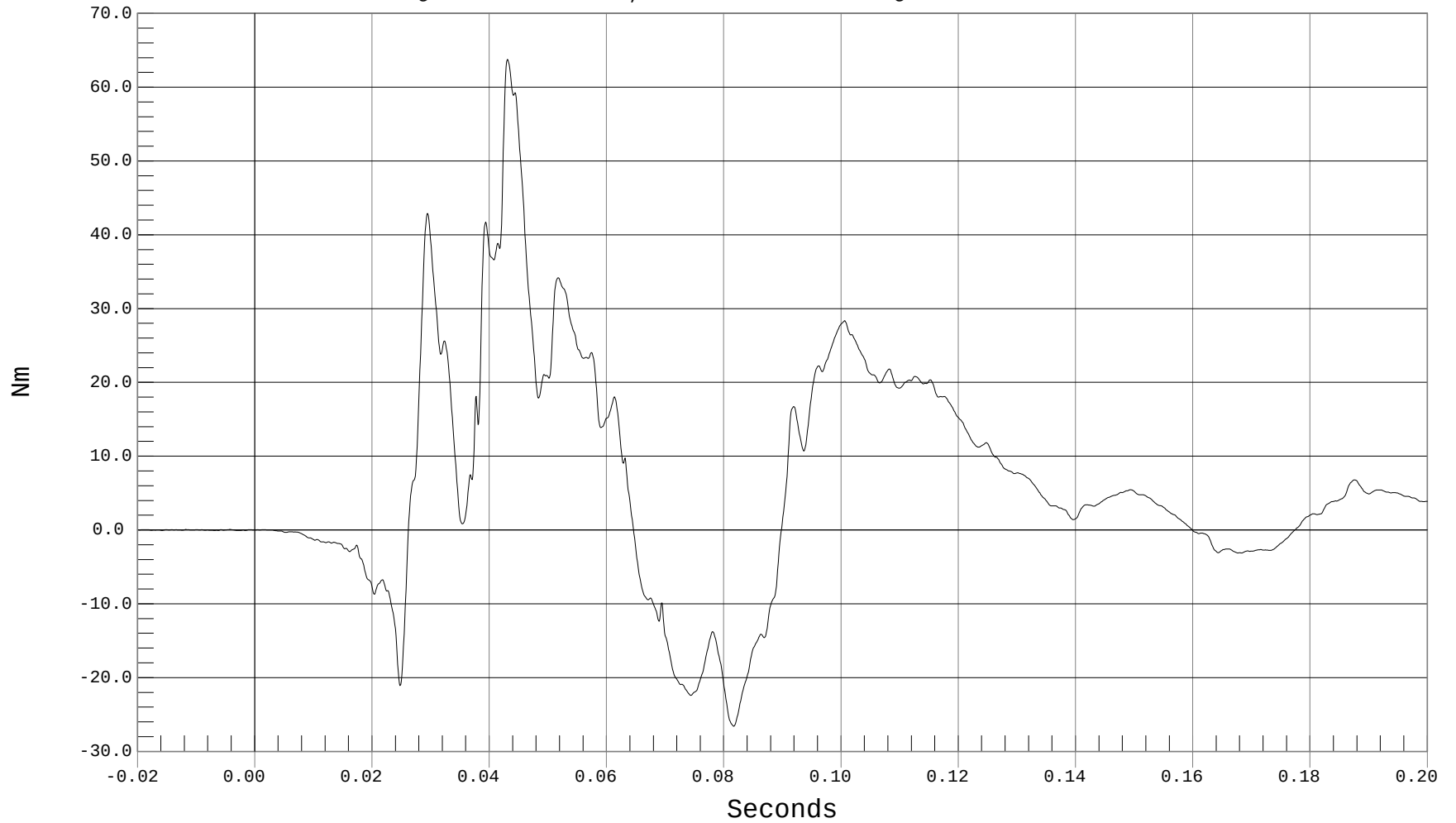
PASSENGER LEFT FEMUR MOMENT Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER LEFT FEMUR MOMENT Y, B01110FF.F23

Ymin = -26.6 Nm @ 0.0816 Seconds, Ymax = 63.76 Nm @ 0.0430 Seconds





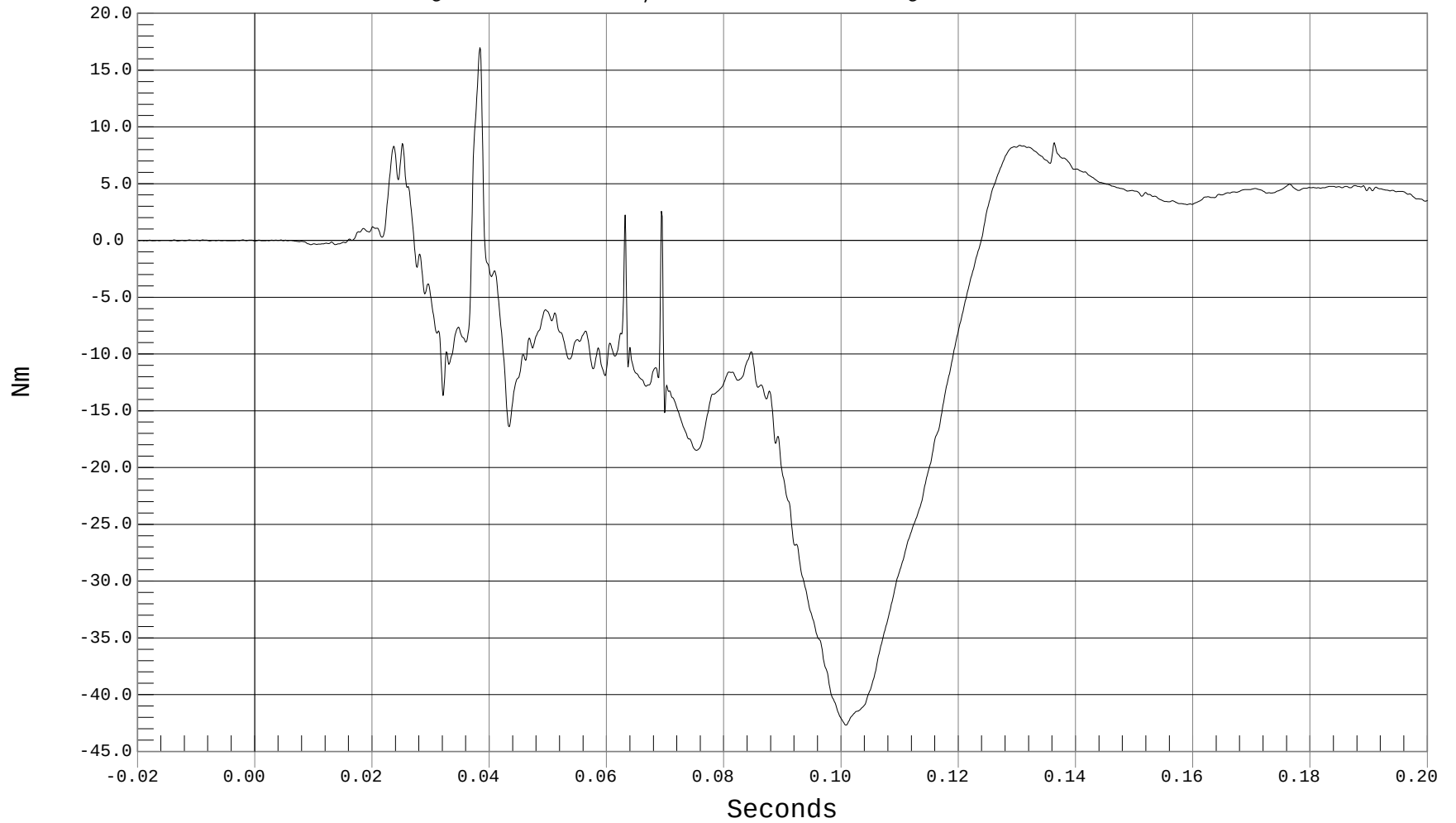
PASSENGER LEFT FEMUR MOMENT Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER LEFT FEMUR MOMENT Z, B01110FF.F24

Ymin = -42.69 Nm @ 0.1007 Seconds, Ymax = 16.97 Nm @ 0.0383 Seconds





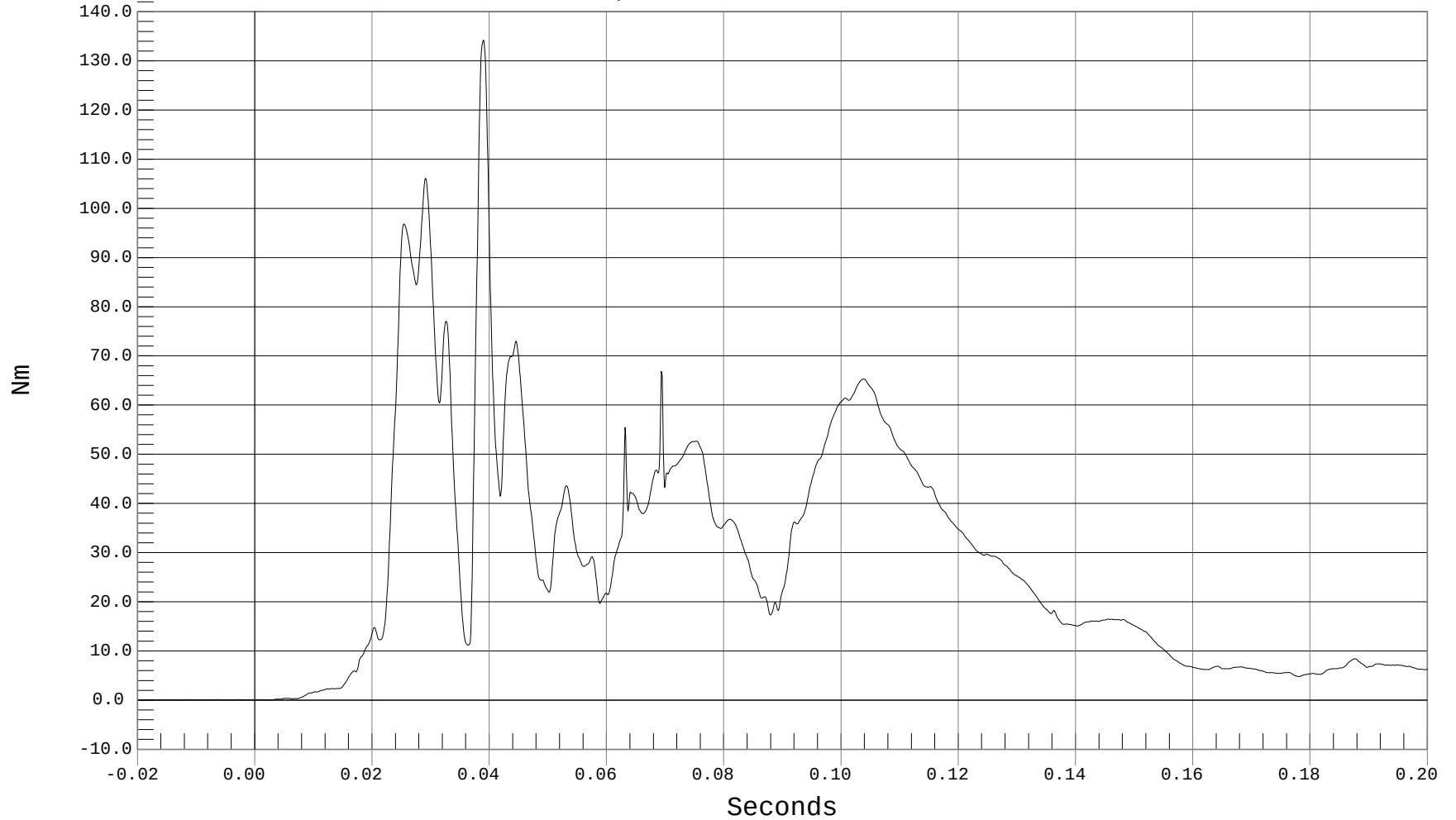
PASSENGER LEFT FEMUR MOMENT RESULTANT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 PASSENGER LEFT FEMUR MOMENT RESULTANT, B01110FV.F22

Ymin = .01 Nm @ 0.0025 Seconds, Ymax = 134.25 Nm @ 0.0389 Seconds





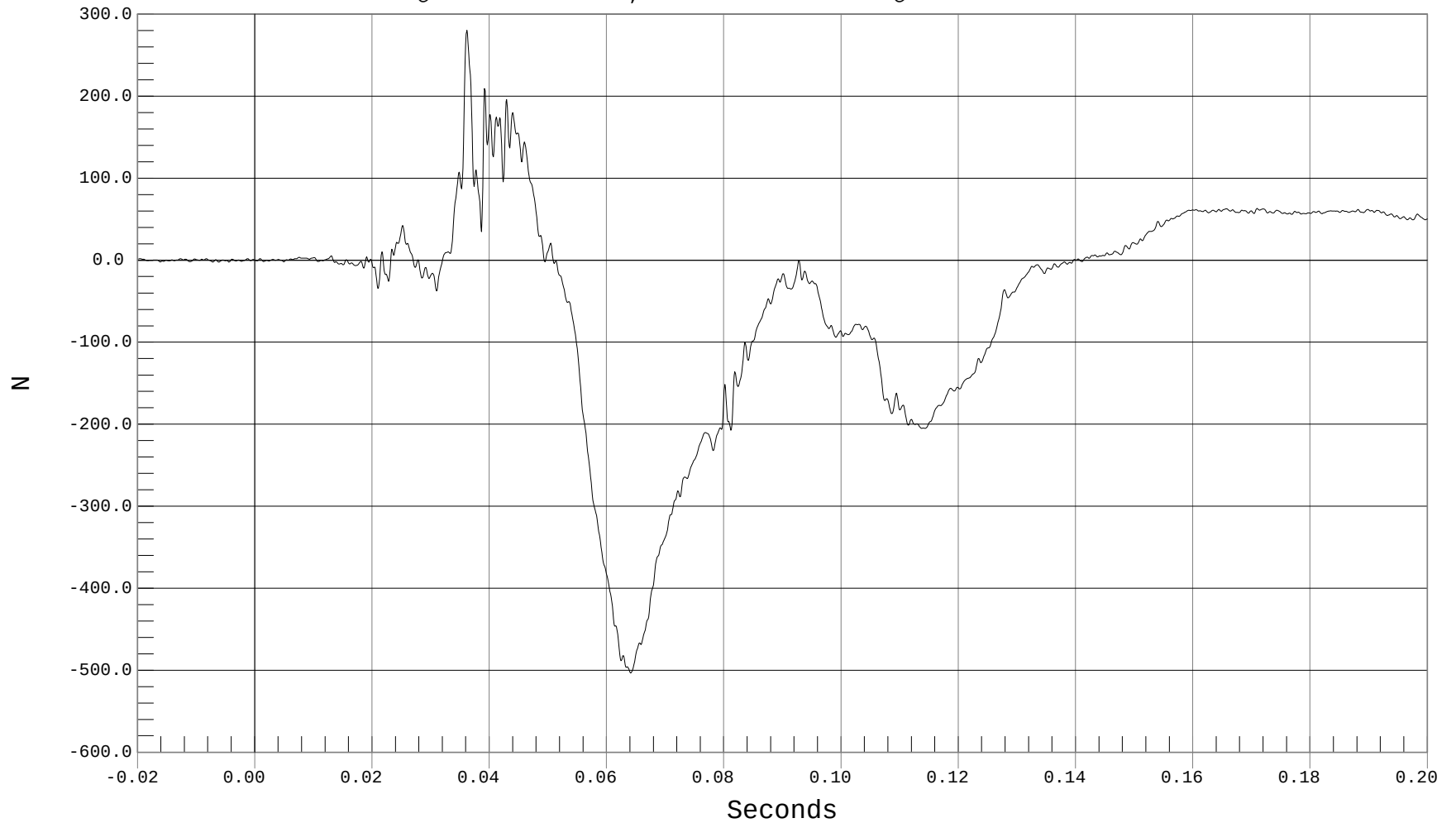
PASSENGER RIGHT FEMUR FORCE X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER RIGHT FEMUR FORCE X, B01110FF.F32

Ymin = -503.4 N @ 0.0640 Seconds, Ymax = 280.25 N @ 0.0361 Seconds





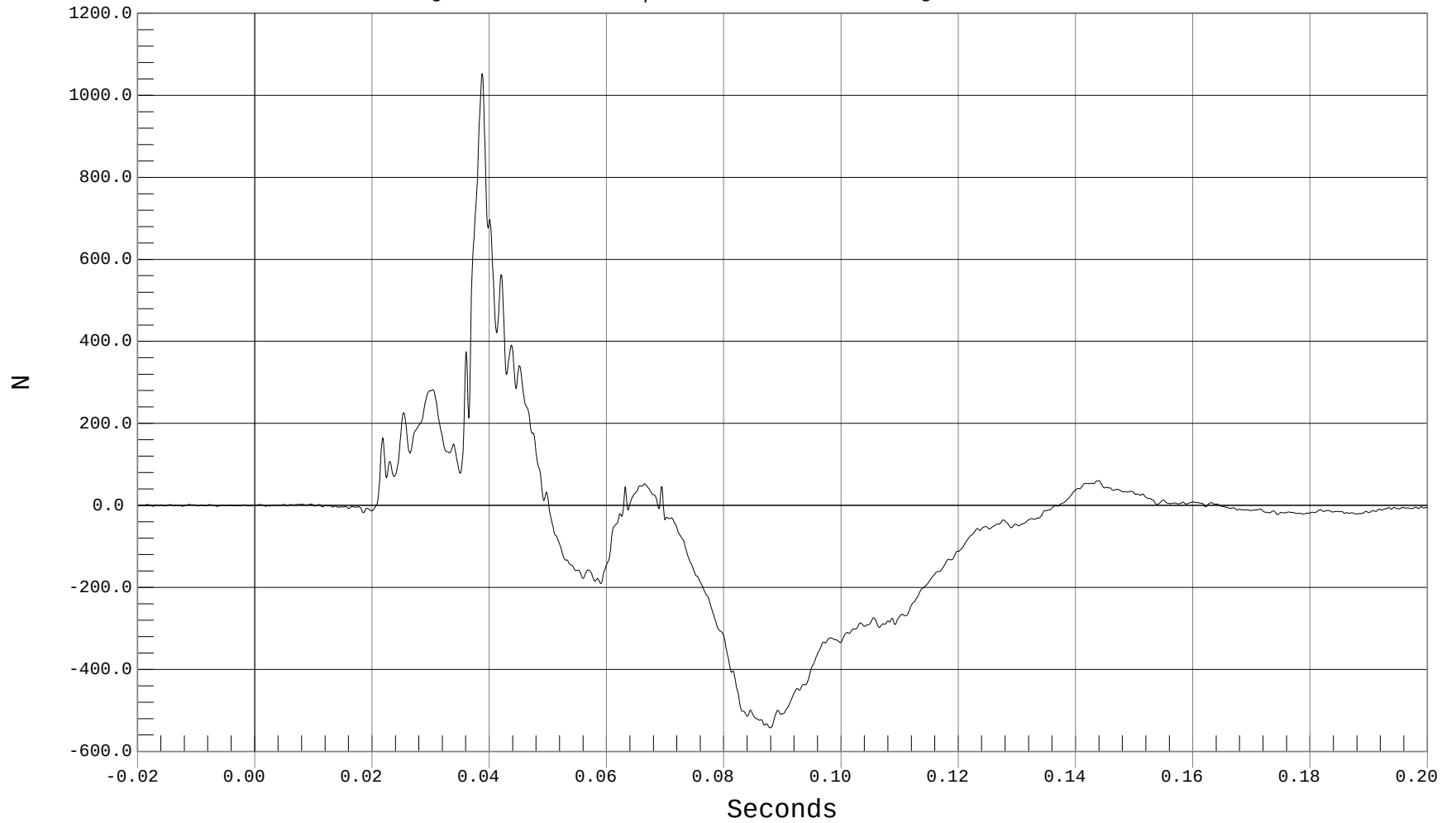
PASSENGER RIGHT FEMUR FORCE Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER RIGHT FEMUR FORCE Y, B01110FF.F14

Ymin = -542.49 N @ 0.0879 Seconds, Ymax = 1052.93 N @ 0.0387 Seconds





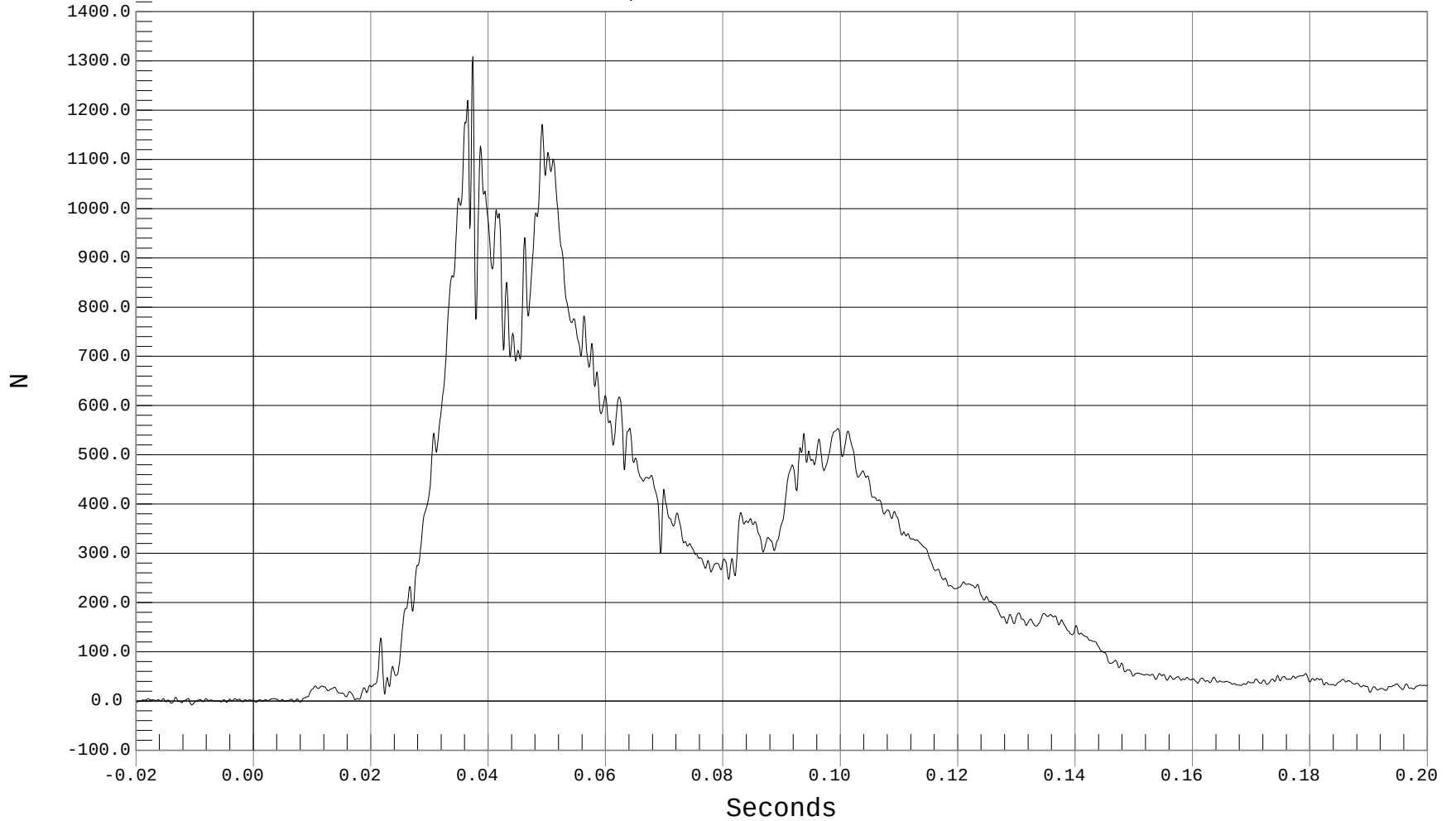
PASSENGER RIGHT FEMUR FORCE Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER RIGHT FEMUR FORCE Z, B01110FF.F15

Ymin = -8.04 N @ -0.0106 Seconds, Ymax = 1309.34 N @ 0.0373 Seconds





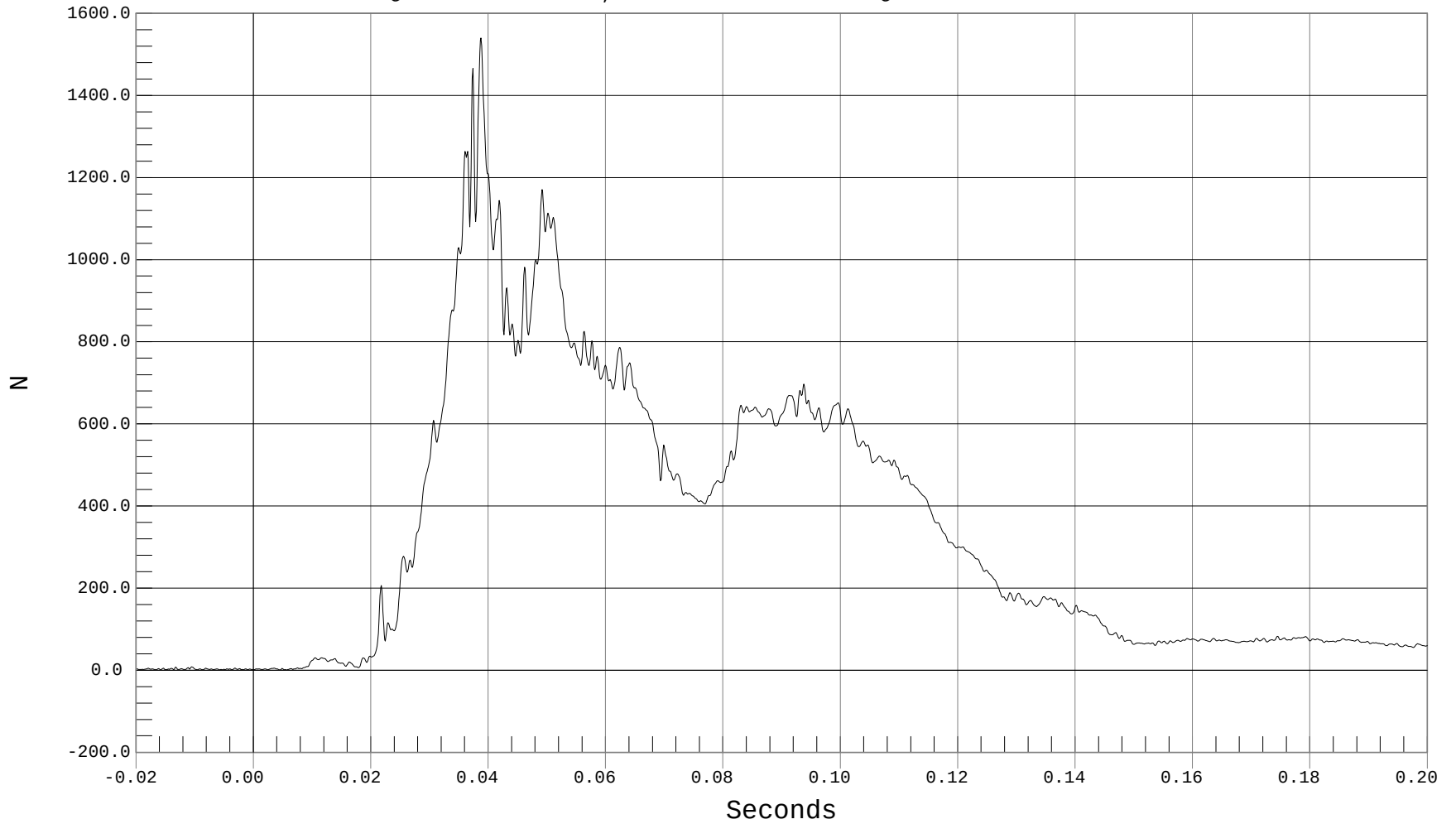
PASSENGER RIGHT FEMUR FORCE RESULTANT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 PASSENGER RIGHT FEMUR FORCE RESULTANT, B01110FV.F14

Ymin = .37 N @ 0.0045 Seconds, Ymax = 1539.99 N @ 0.0387 Seconds





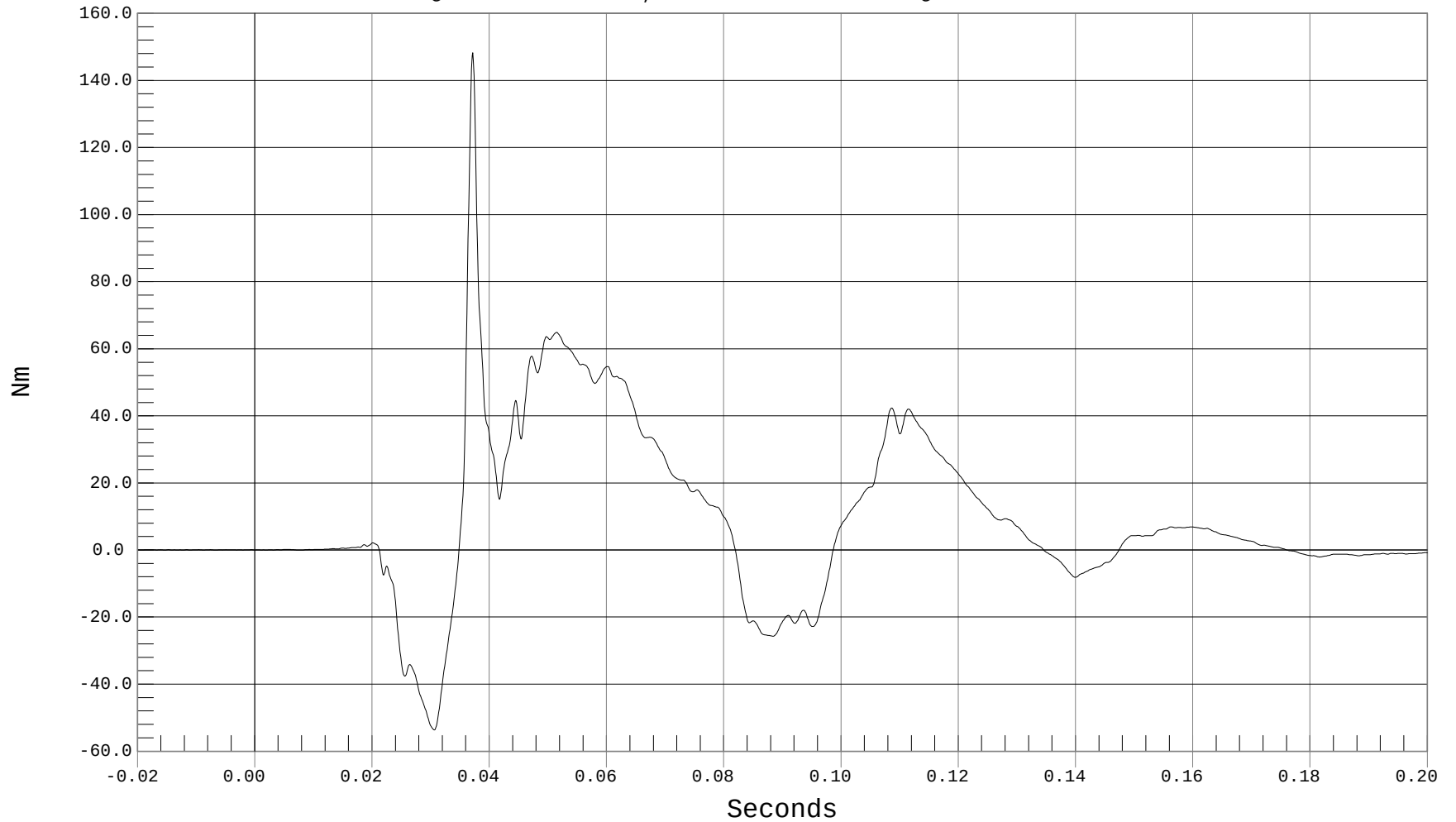
PASSENGER RIGHT FEMUR MOMENT X

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER RIGHT FEMUR MOMENT X, B01110FF.F16

Ymin = -53.66 Nm @ 0.0305 Seconds, Ymax = 148.27 Nm @ 0.0371 Seconds





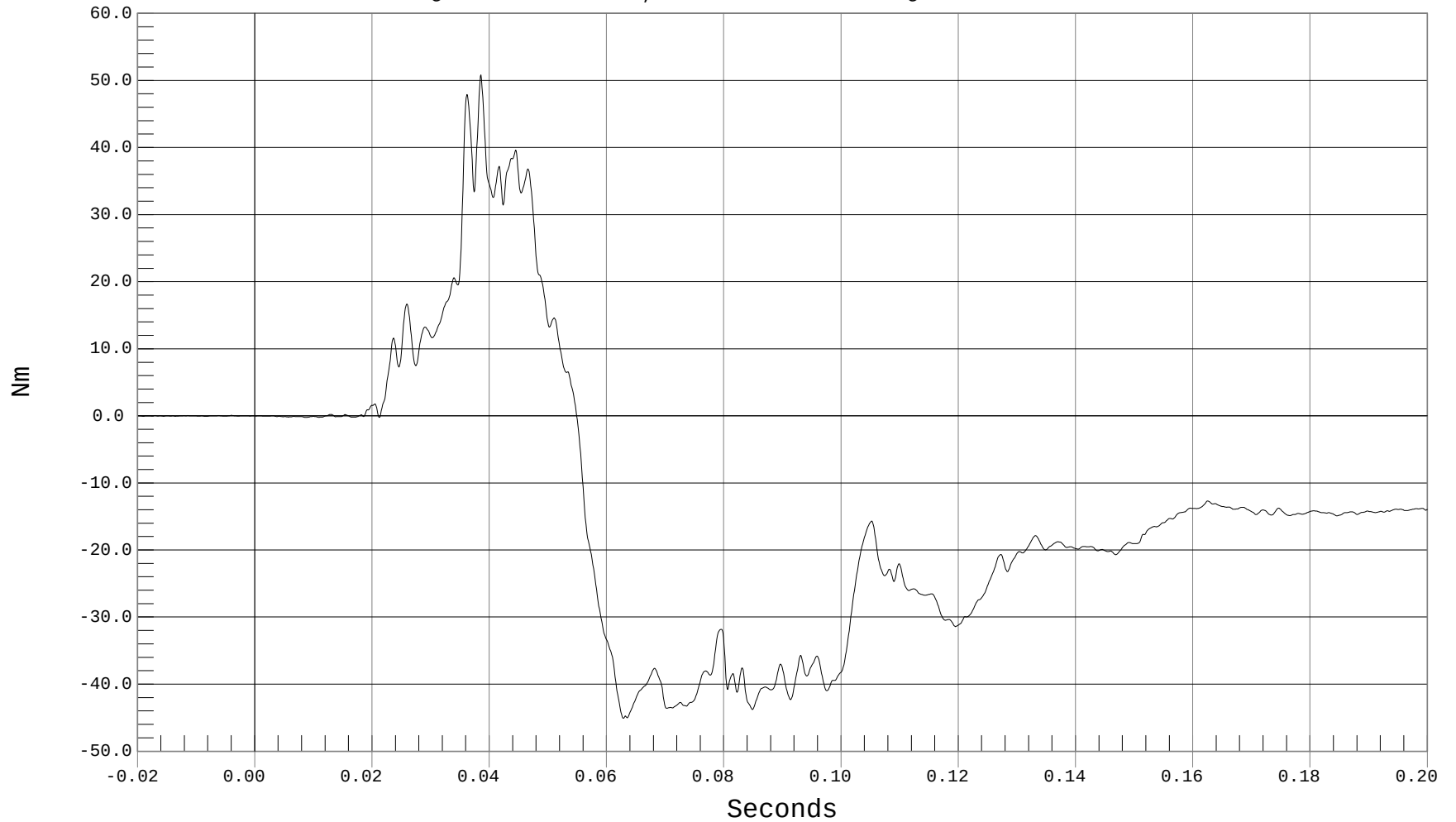
PASSENGER RIGHT FEMUR MOMENT Y

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER RIGHT FEMUR MOMENT Y, B01110FF.F17

Ymin = -45.11 Nm @ 0.0628 Seconds, Ymax = 50.83 Nm @ 0.0385 Seconds





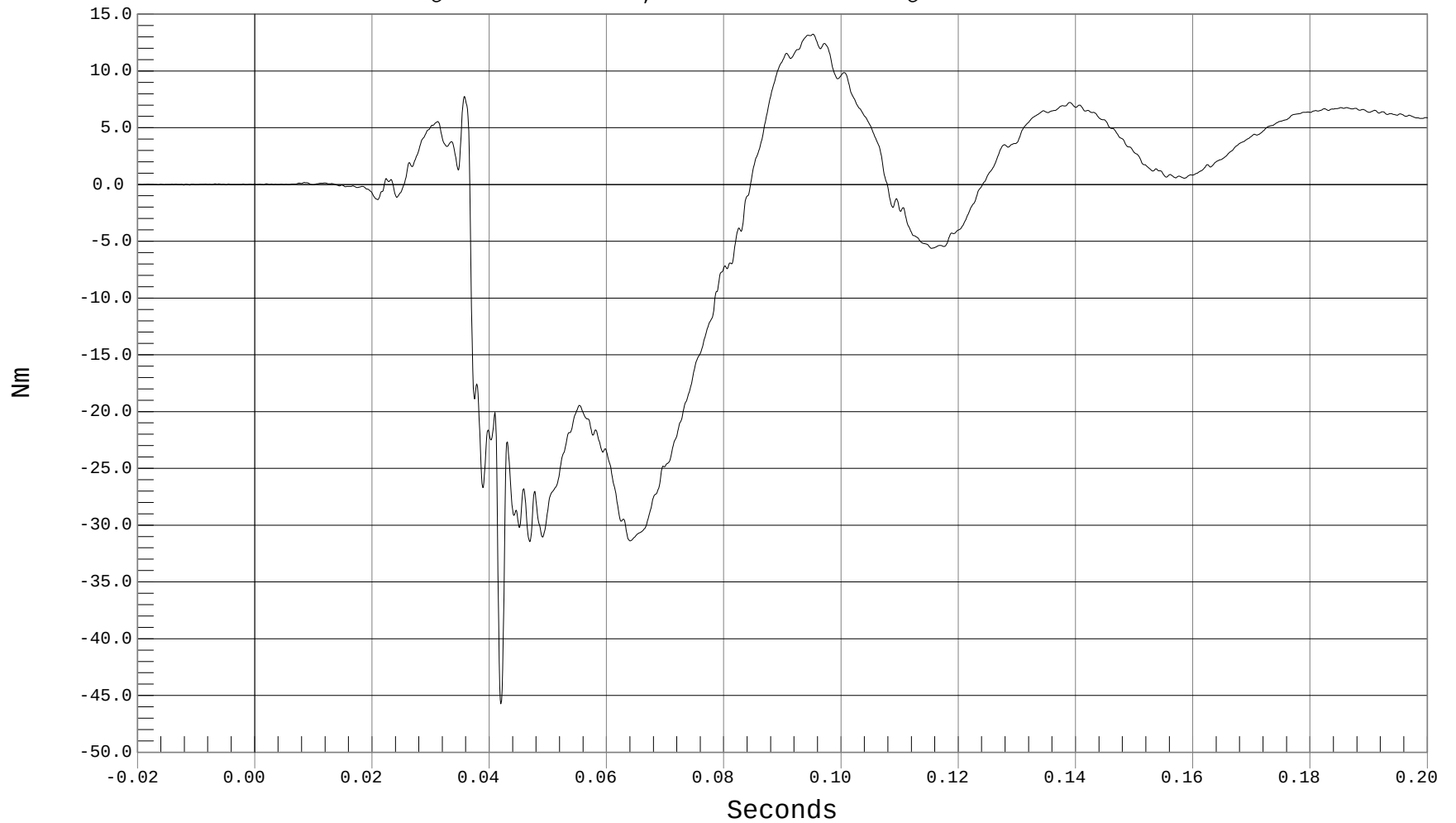
PASSENGER RIGHT FEMUR MOMENT Z

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 REAR PASSENGER RIGHT FEMUR MOMENT Z, B01110FF.F18

Ymin = -45.75 Nm @ 0.0419 Seconds, Ymax = 13.23 Nm @ 0.0951 Seconds





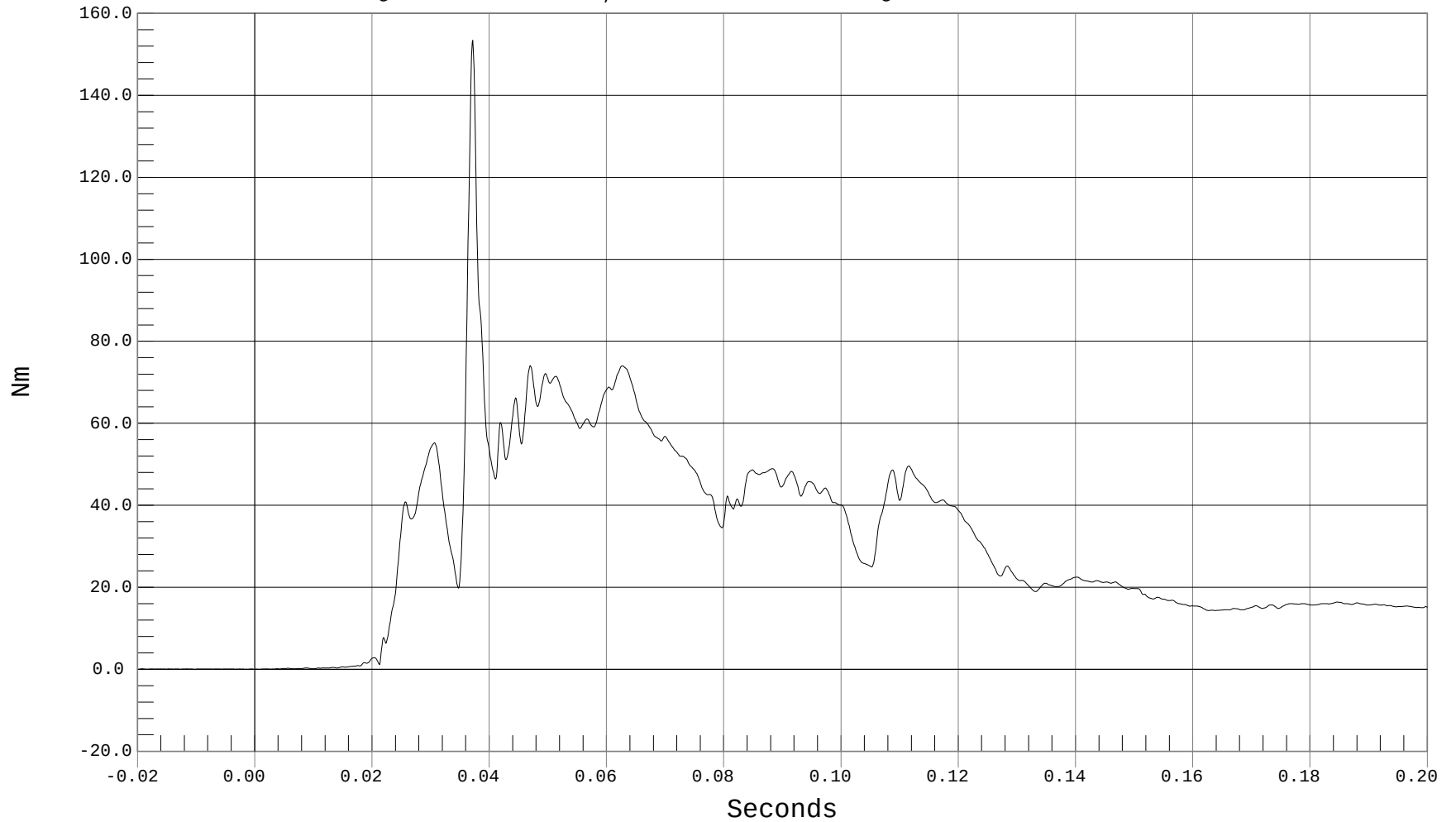
PASSENGER RIGHT FEMUR MOMENT RESULTANT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 600

— 1 PASSENGER RIGHT FEMUR MOMENT RESULTANT, B01110FV.F16

Ymin = 0 Nm @ -0.0013 Seconds, Ymax = 153.45 Nm @ 0.0371 Seconds





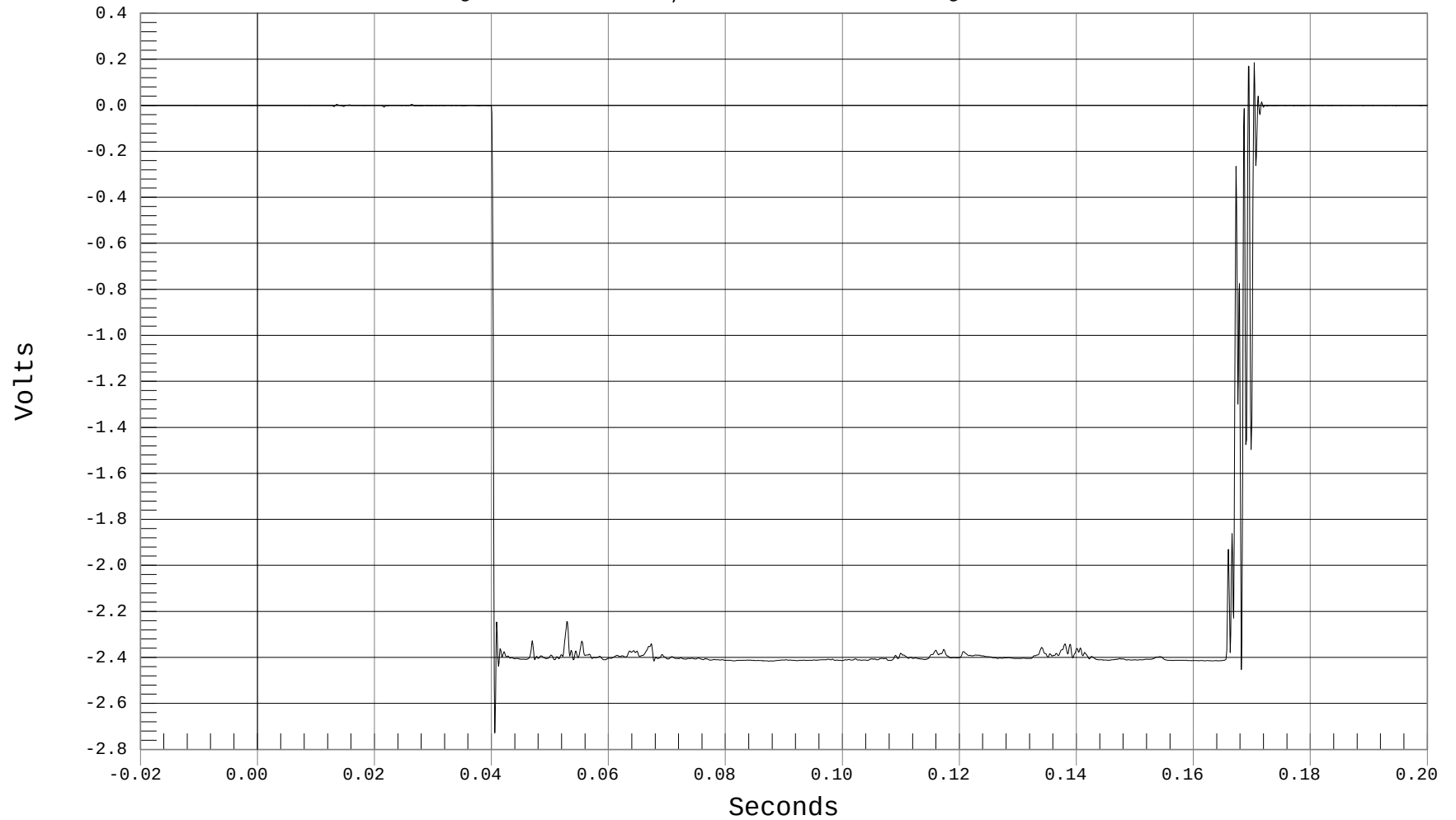
PASSENGER HEAD CONTACT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER HEAD CONTACT, B011100T.075

Ymin = -2.73 Volts @ 0.0405 Seconds, Ymax = .19 Volts @ 0.1703 Seconds





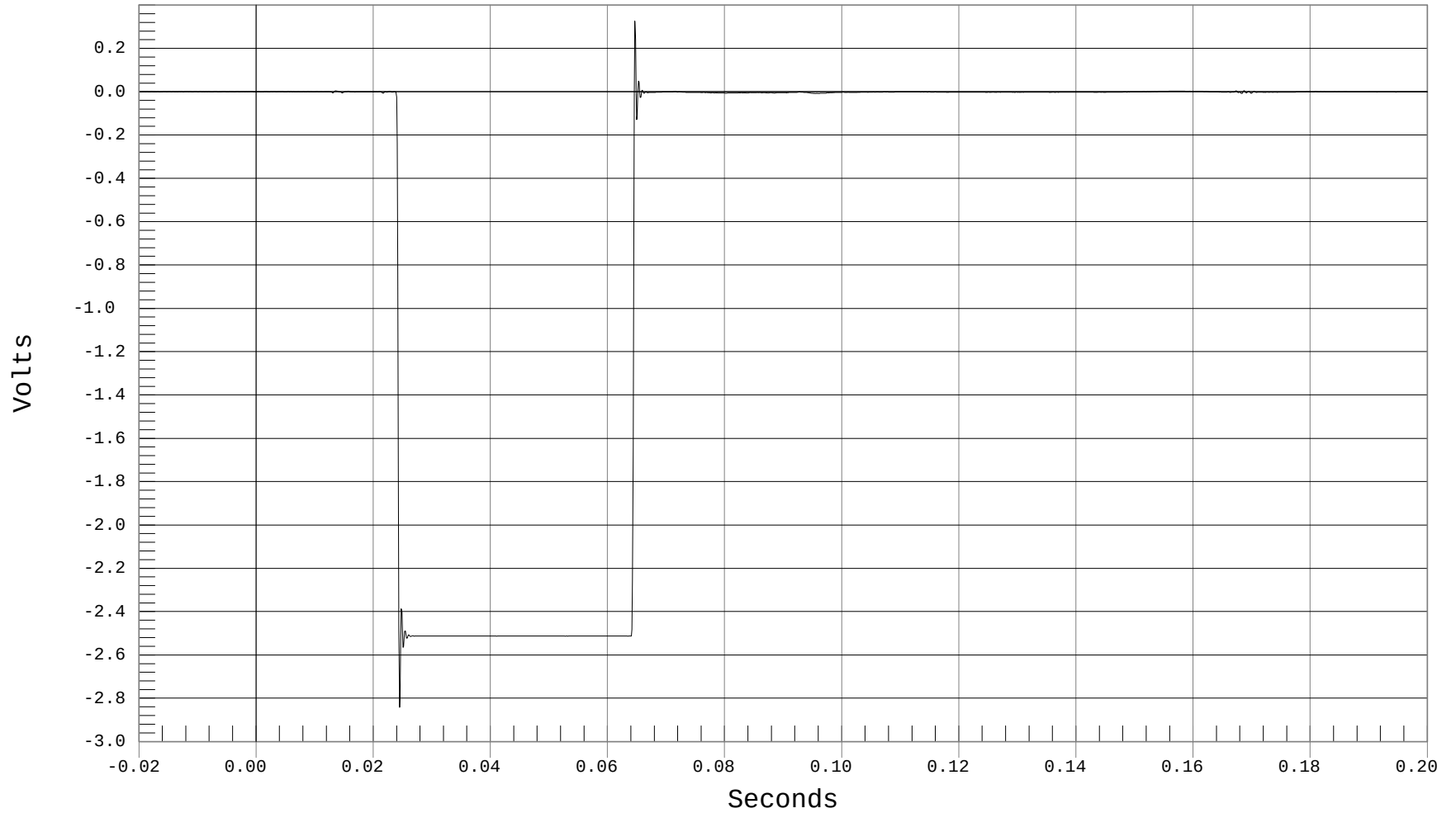
PASSENGER ARM CONTACT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER ARM CONTACT, B011100T.076

Ymin = -2.84 Volts @ 0.0244 Seconds, Ymax = .33 Volts @ 0.0646 Seconds





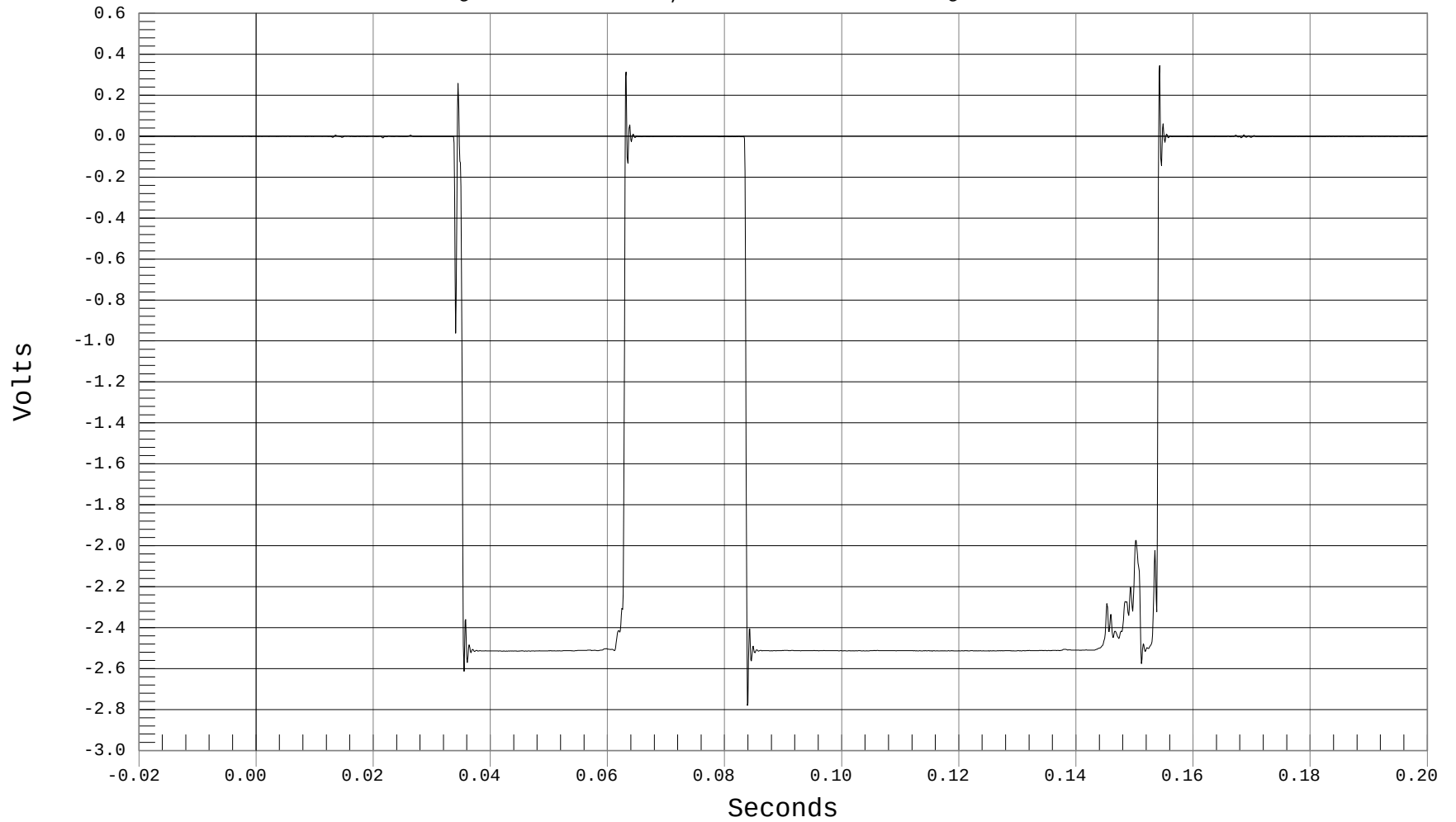
PASSENGER RIB CONTACT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER RIB CONTACT, B011100T.077

Ymin = -2.78 Volts @ 0.0838 Seconds, Ymax = .34 Volts @ 0.1542 Seconds





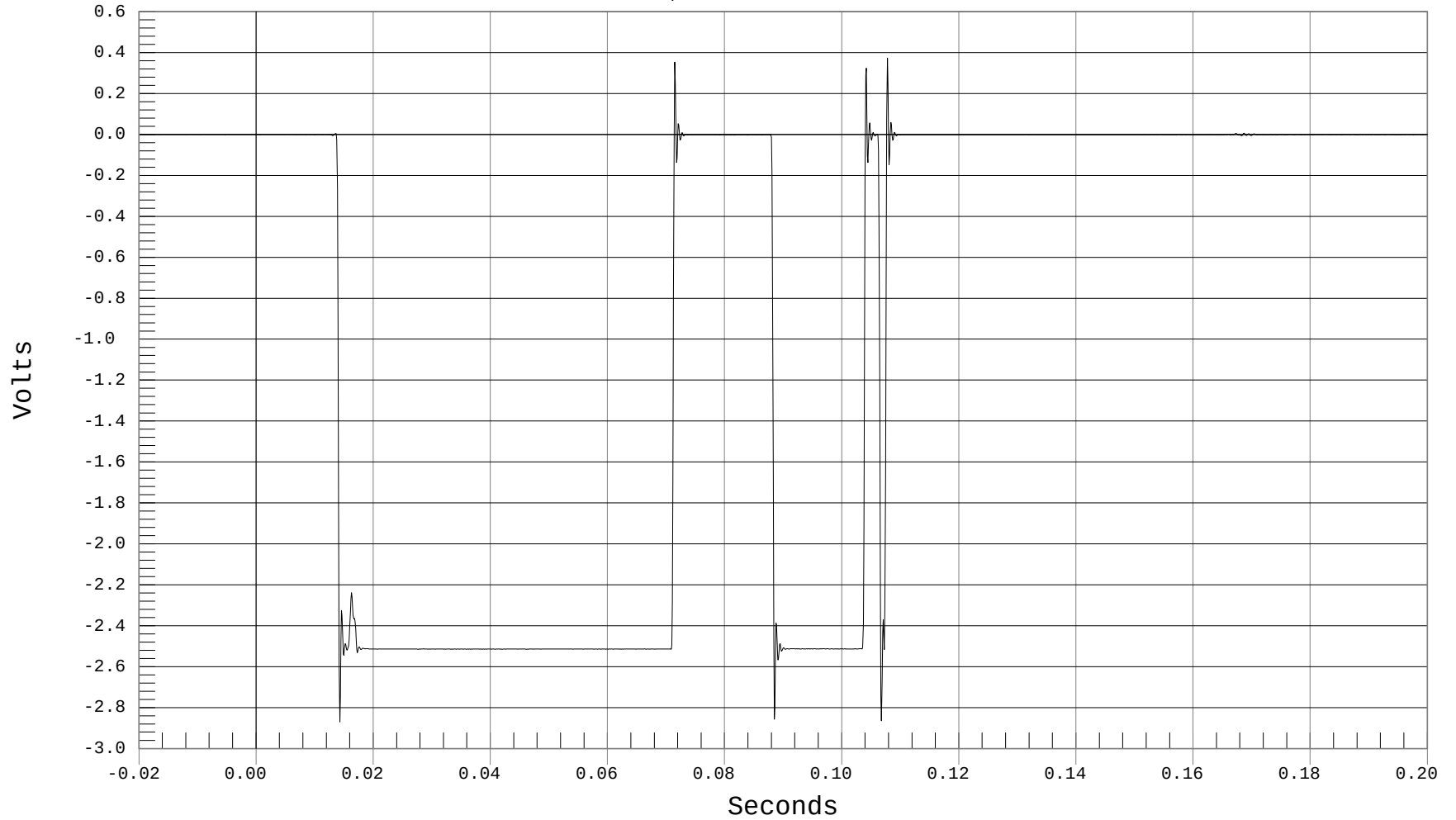
PASSENGER PELVIS CONTACT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 REAR PASSENGER PELVIS CONTACT, B011100T.078

Ymin = -2.87 Volts @ 0.0142 Seconds, Ymax = .37 Volts @ 0.1077 Seconds





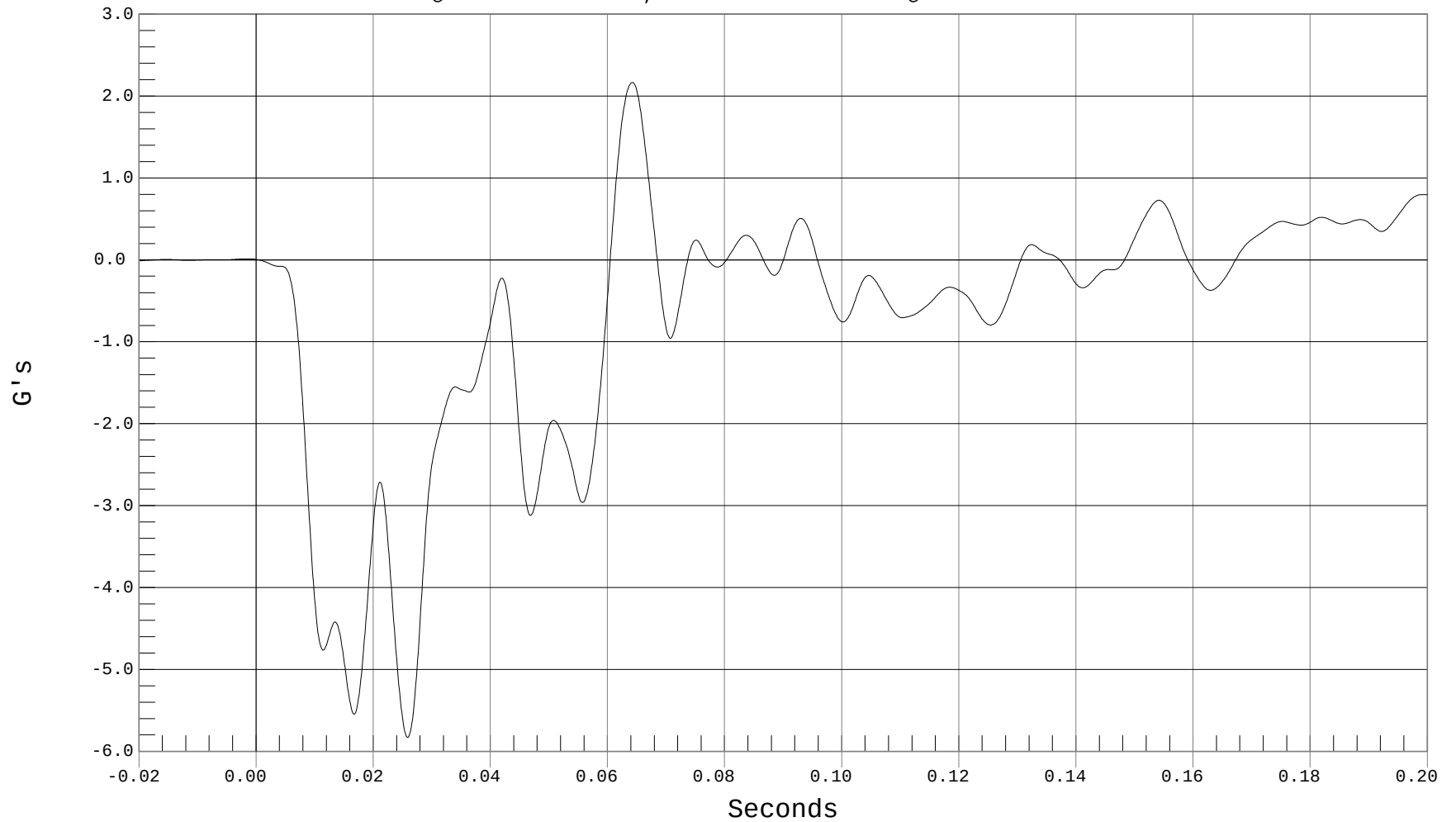
RIGHT SIDE SILL AT FRONT SEAT X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 RIGHT FRONT SILL X, B01110AF.A25

Ymin = -5.83 G's @ 0.0258 Seconds, Ymax = 2.17 G's @ 0.0642 Seconds





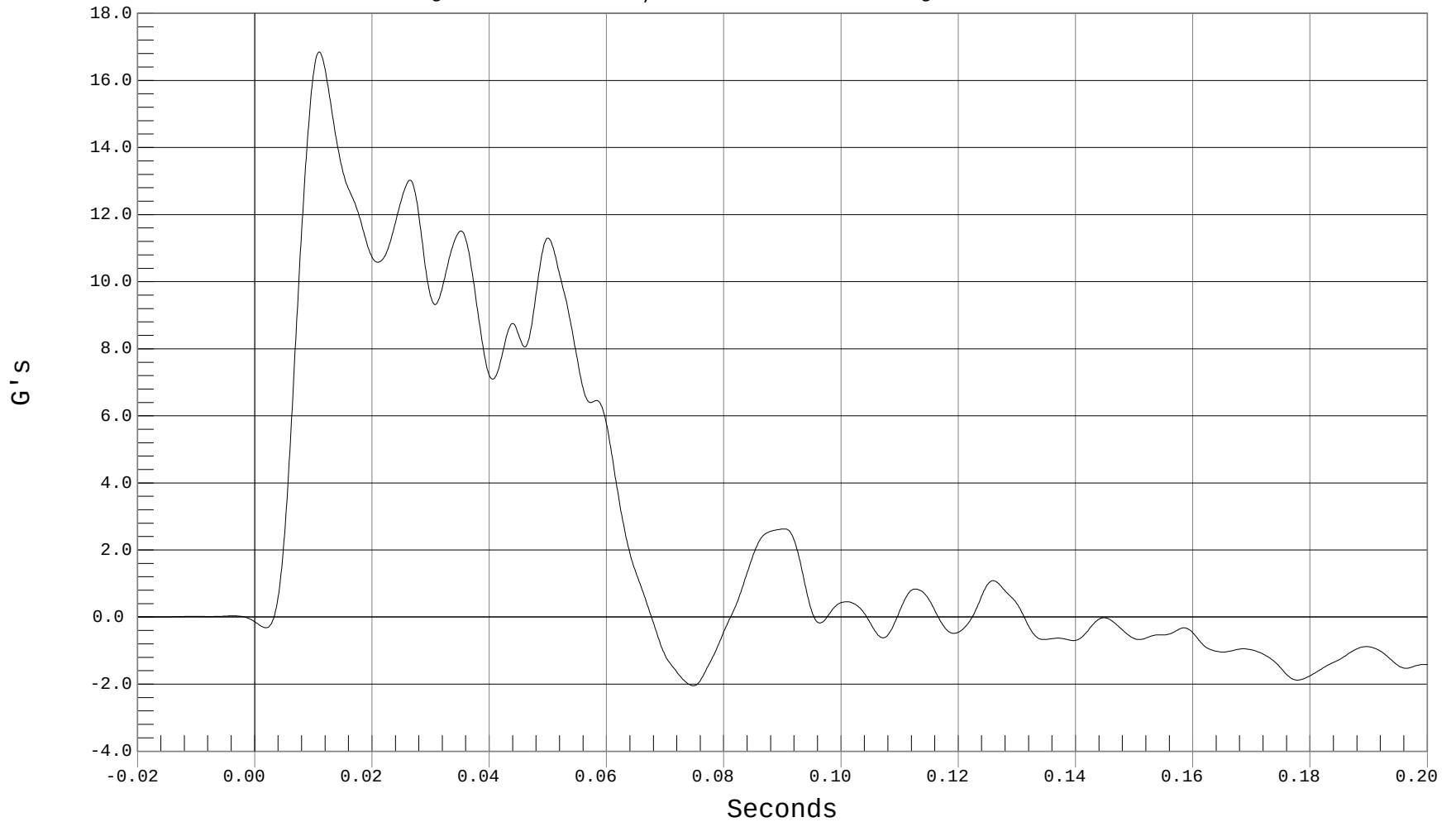
RIGHT SIDE SILL AT FRONT SEAT Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 RIGHT FRONT SILL Y, B01110AF.A26

Ymin = -2.05 G's @ 0.0748 Seconds, Ymax = 16.85 G's @ 0.0109 Seconds





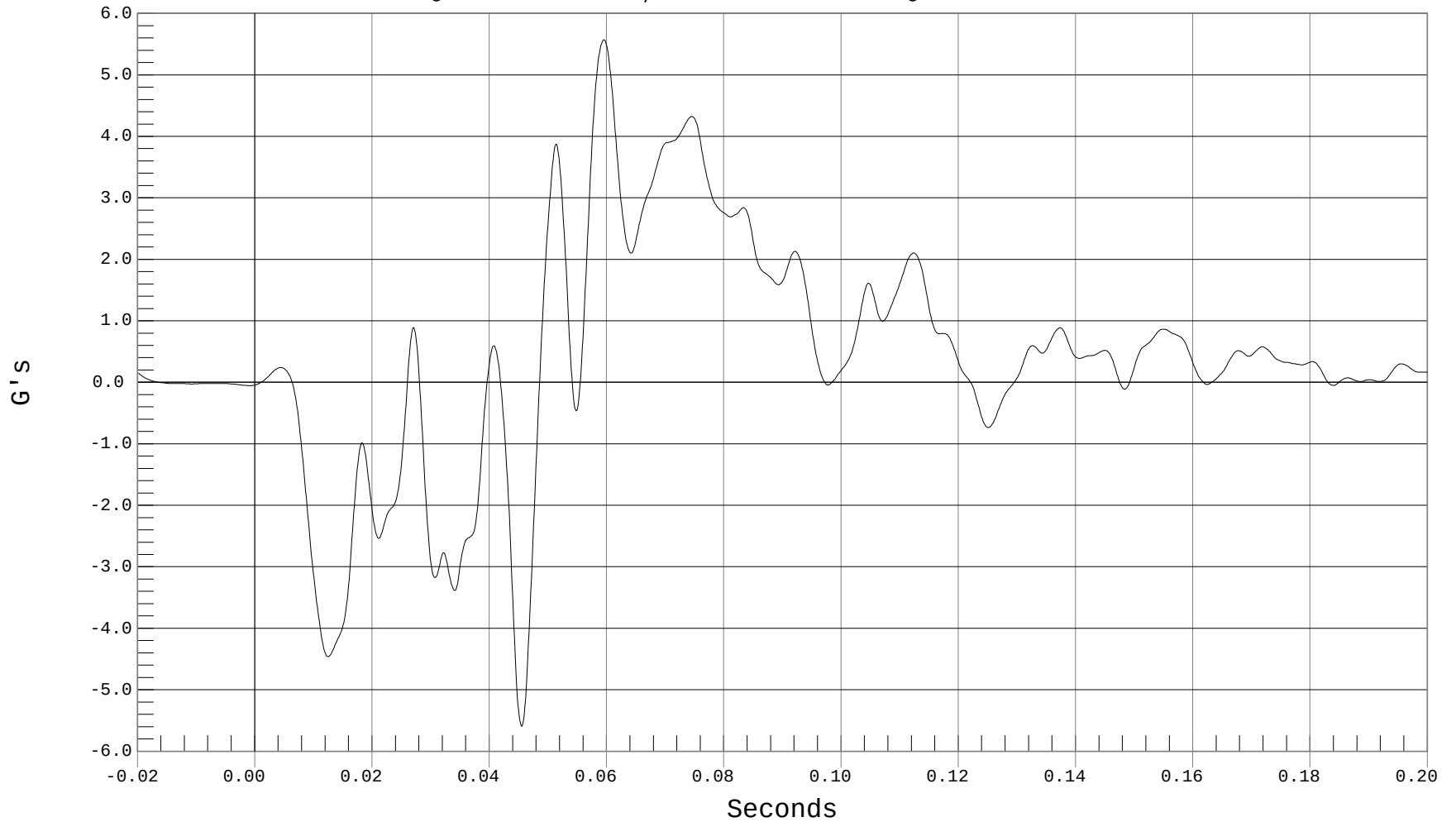
RIGHT SIDE SILL AT FRONT SEAT Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 RIGHT FRONT SILL Z, B01110AF.A27

Ymin = -5.59 G's @ 0.0455 Seconds, Ymax = 5.57 G's @ 0.0595 Seconds





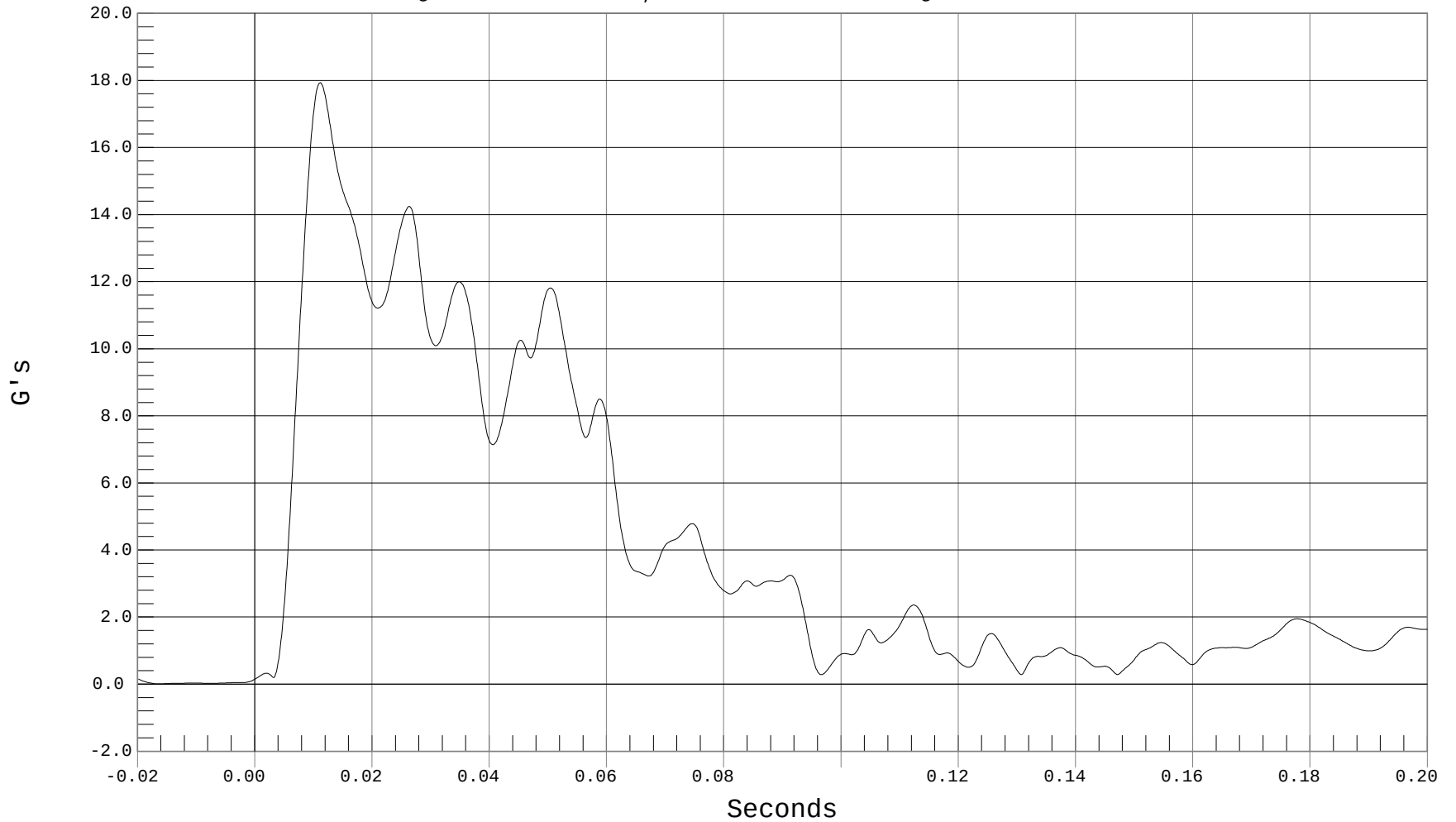
RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 RIGHT FRONT SILL RESULTANT ACCELERATION, B01110AV.A25

Ymin = .01 G's @ -0.0165 Seconds, Ymax = 17.93 G's @ 0.0111 Seconds





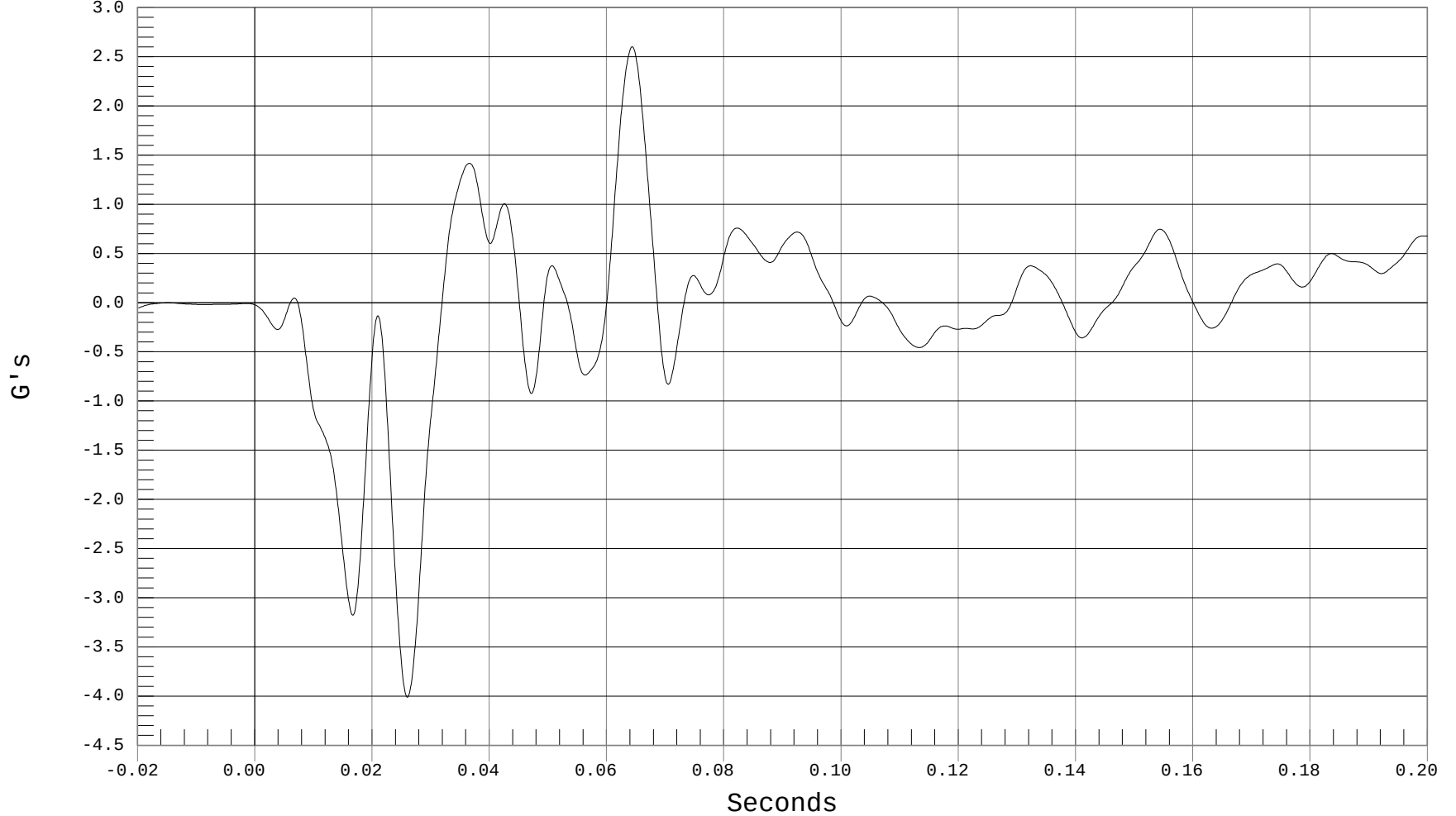
RIGHT SIDE SILL AT REAR SEAT X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 RIGHT REAR SILL X, B01110AF.A28

Ymin = -4.01 G's @ 0.0259 Seconds, Ymax = 2.6 G's @ 0.0643 Seconds





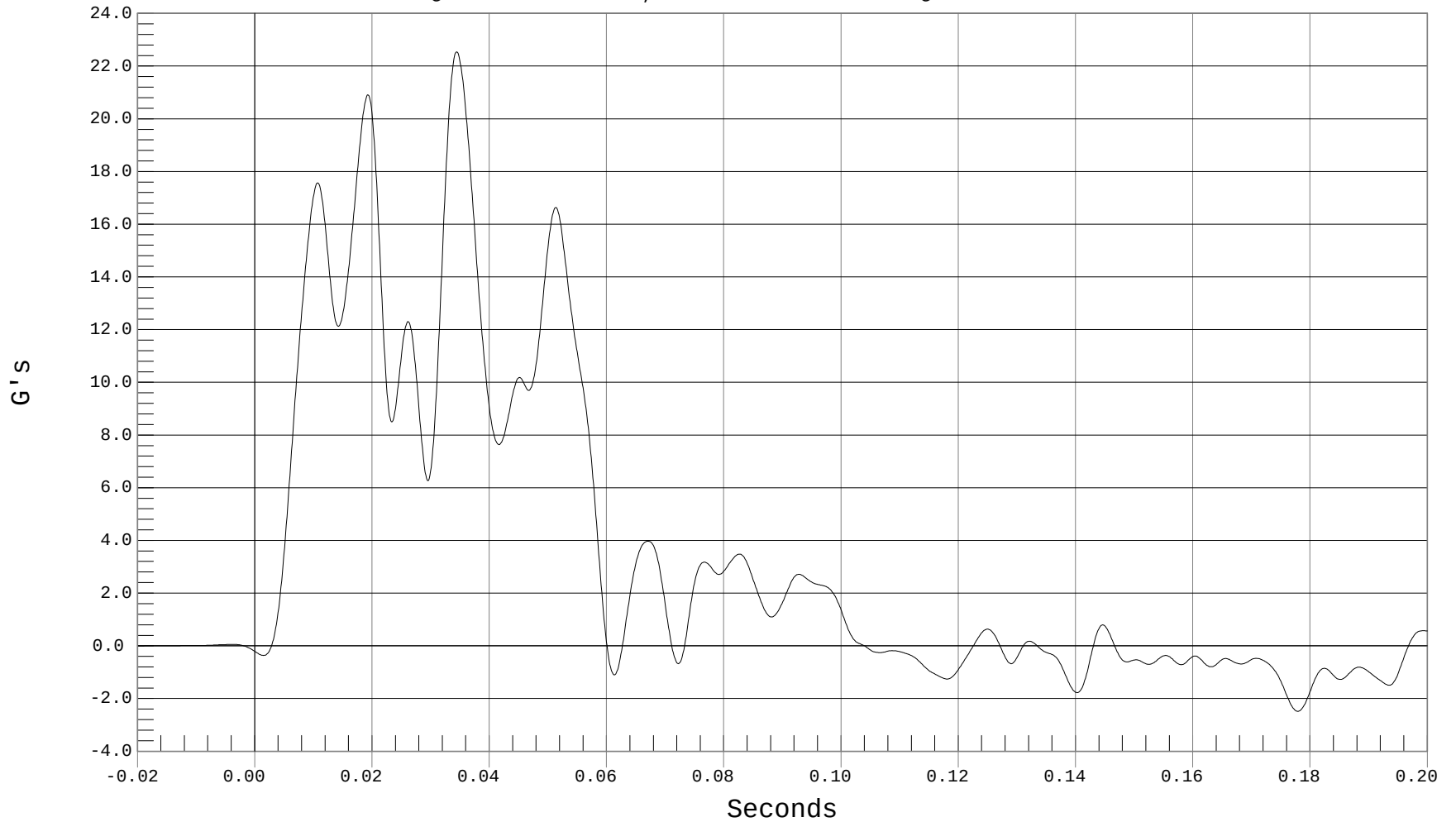
RIGHT SIDE SILL AT REAR SEAT Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 RIGHT REAR SILL Y, B01110AF.A29

Ymin = -2.48 G's @ 0.1778 Seconds, Ymax = 22.54 G's @ 0.0344 Seconds





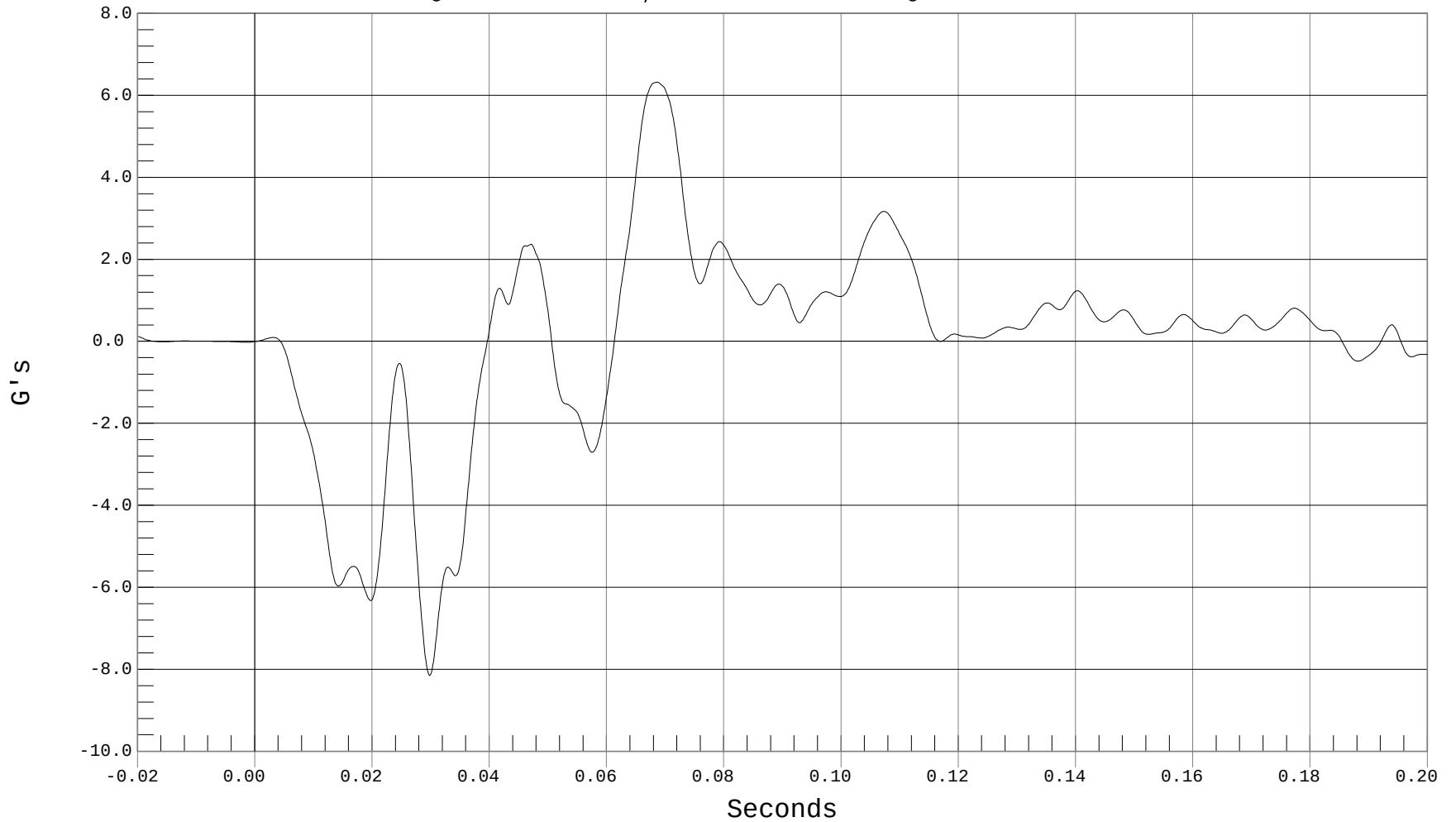
RIGHT SIDE SILL AT REAR SEAT Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 RIGHT REAR SILL Z, B01110AF.A30

Ymin = -8.15 G's @ 0.0298 Seconds, Ymax = 6.32 G's @ 0.0686 Seconds





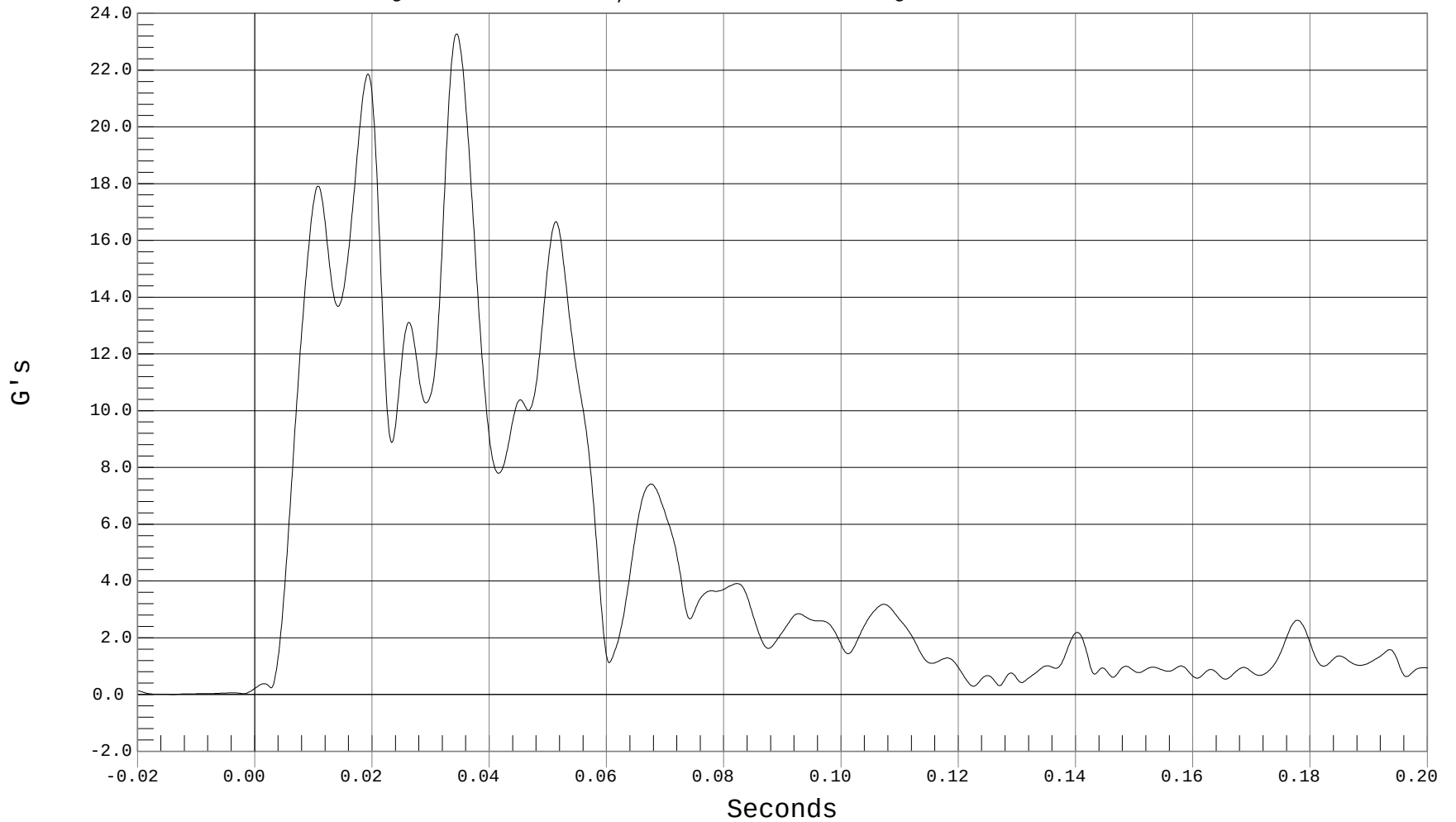
RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 RIGHT REAR SILL RESULTANT ACCELERATION, B01110AV.A28

Ymin = 0 G's @ -0.0140 Seconds, Ymax = 23.28 G's @ 0.0343 Seconds





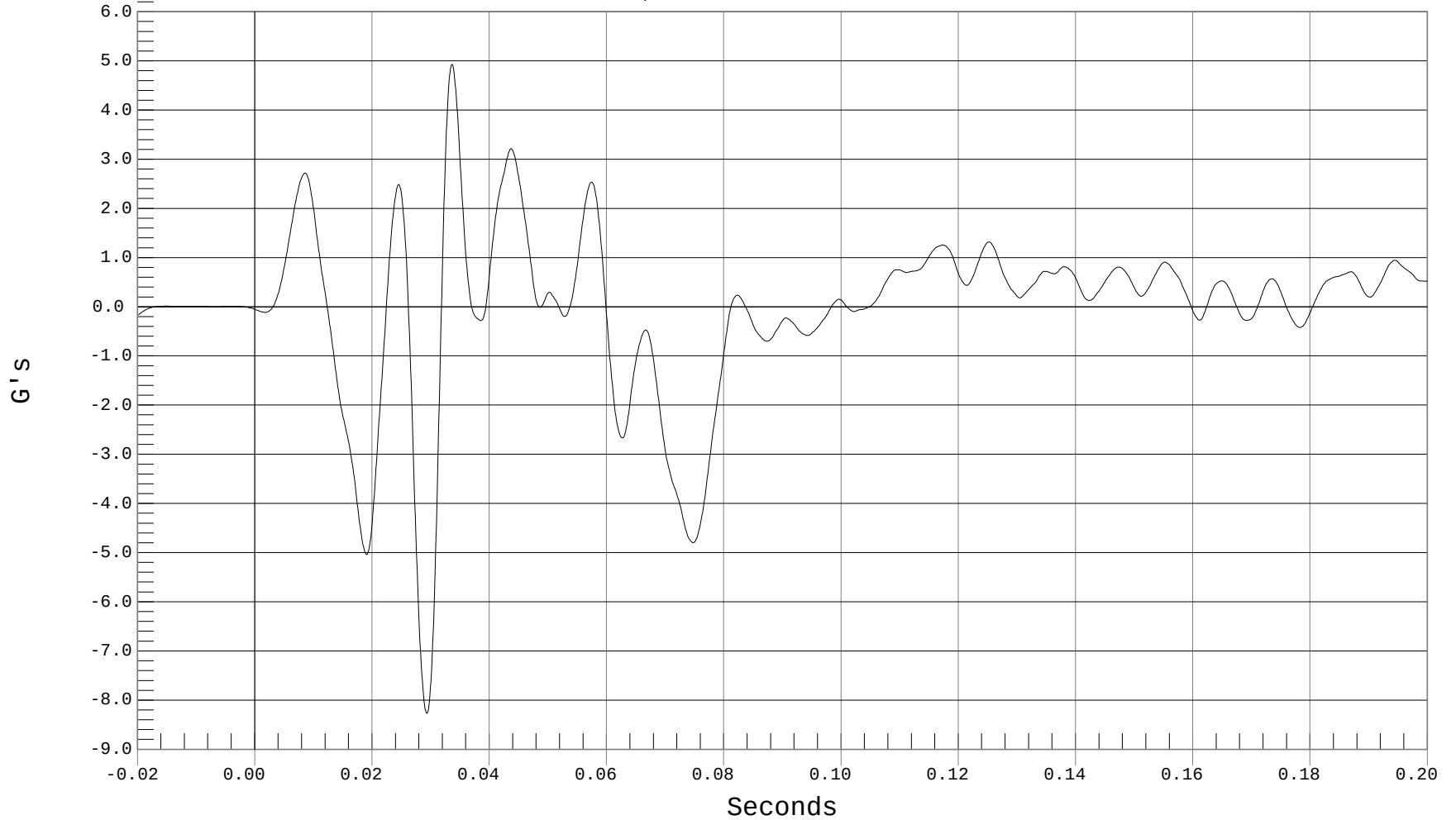
REAR FLOORPAN ABOVE AXLE X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 FLOORPAN @ REAR AXLE X, B01110AF.A34

Ymin = -8.27 G's @ 0.0293 Seconds, Ymax = 4.93 G's @ 0.0335 Seconds





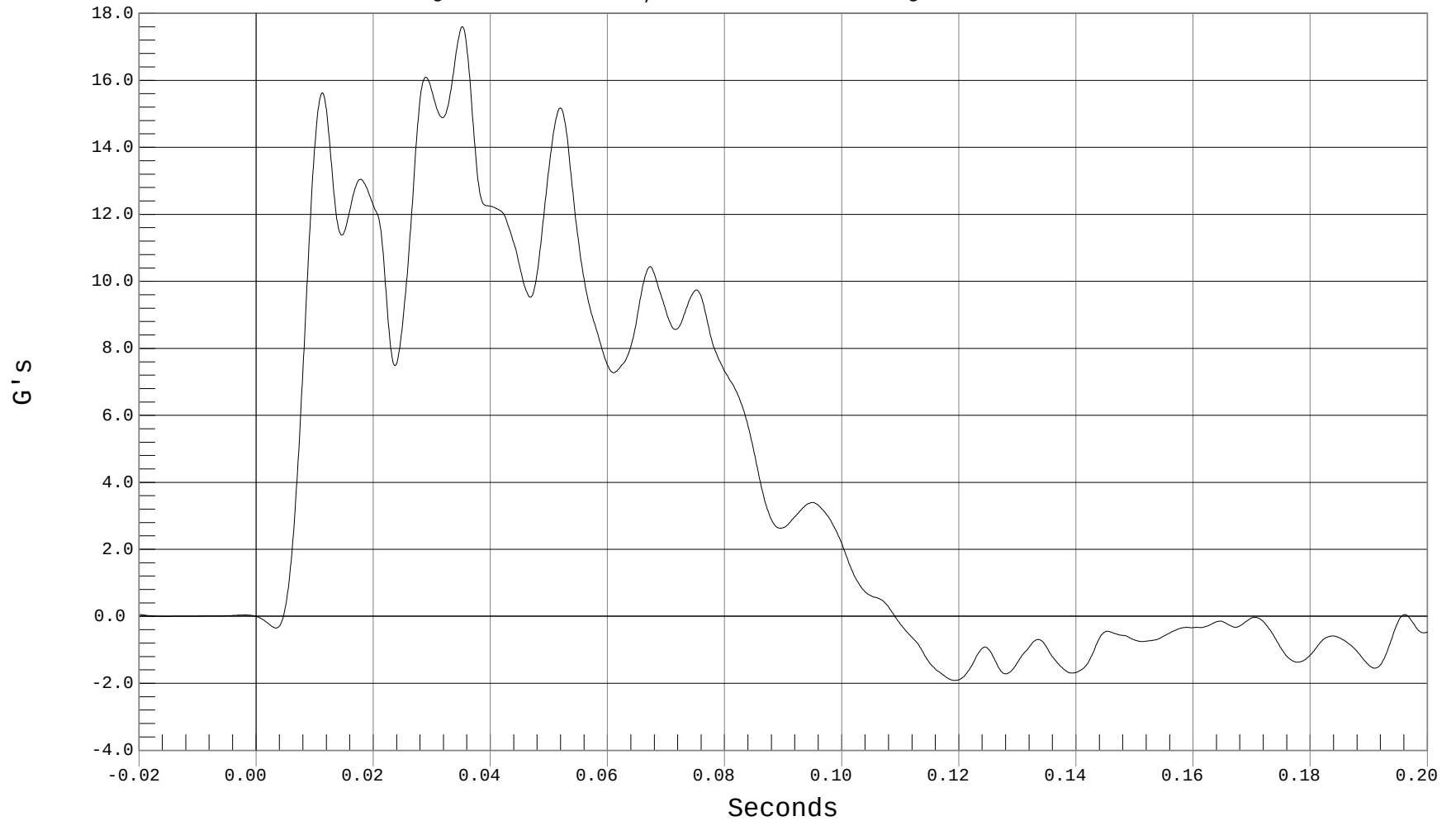
REAR FLOORPAN ABOVE AXLE Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 FLOORPAN @ REAR AXLE Y, B01110AF.A35

Ymin = -1.91 G's @ 0.1192 Seconds, Ymax = 17.6 G's @ 0.0351 Seconds





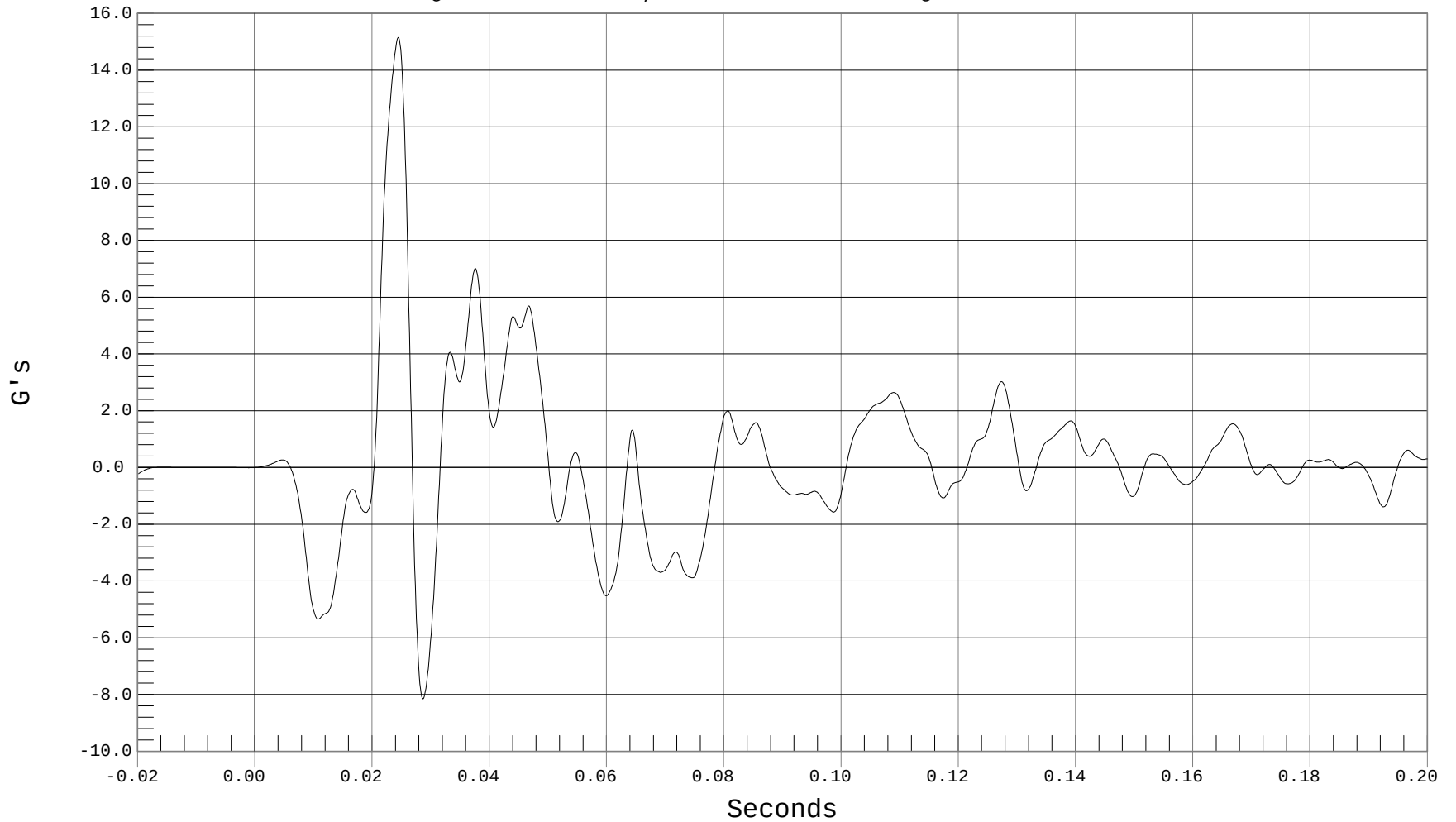
REAR FLOORPAN ABOVE AXLE Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 FLOORPAN @ REAR AXLE Z, B01110AF.A36

Ymin = -8.16 G's @ 0.0286 Seconds, Ymax = 15.15 G's @ 0.0244 Seconds





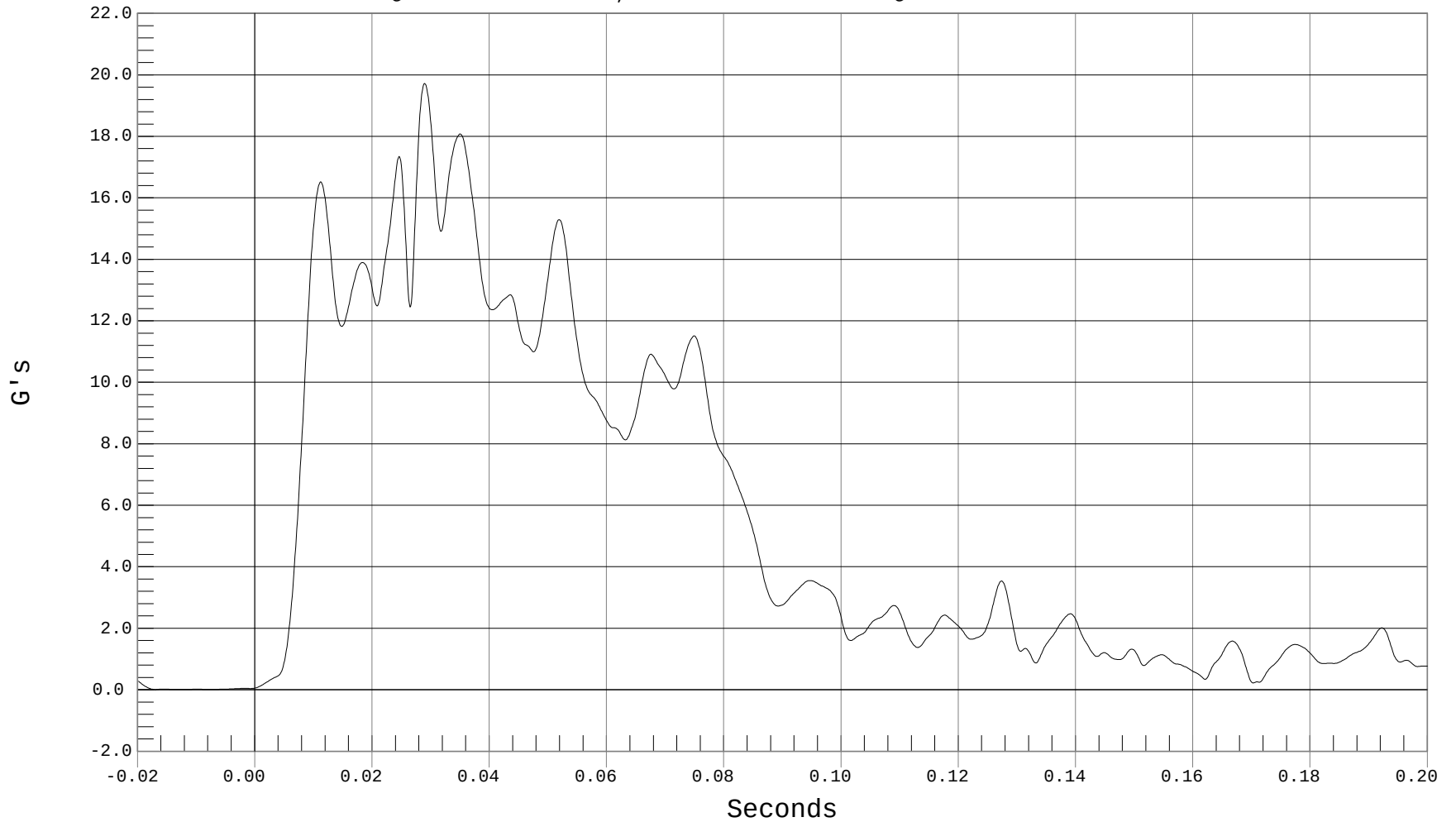
REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 FLOORPAN @ REAR AXLE ACCELERATION, B01110AV.A34

Ymin = 0 G's @ -0.0171 Seconds, Ymax = 19.72 G's @ 0.0289 Seconds





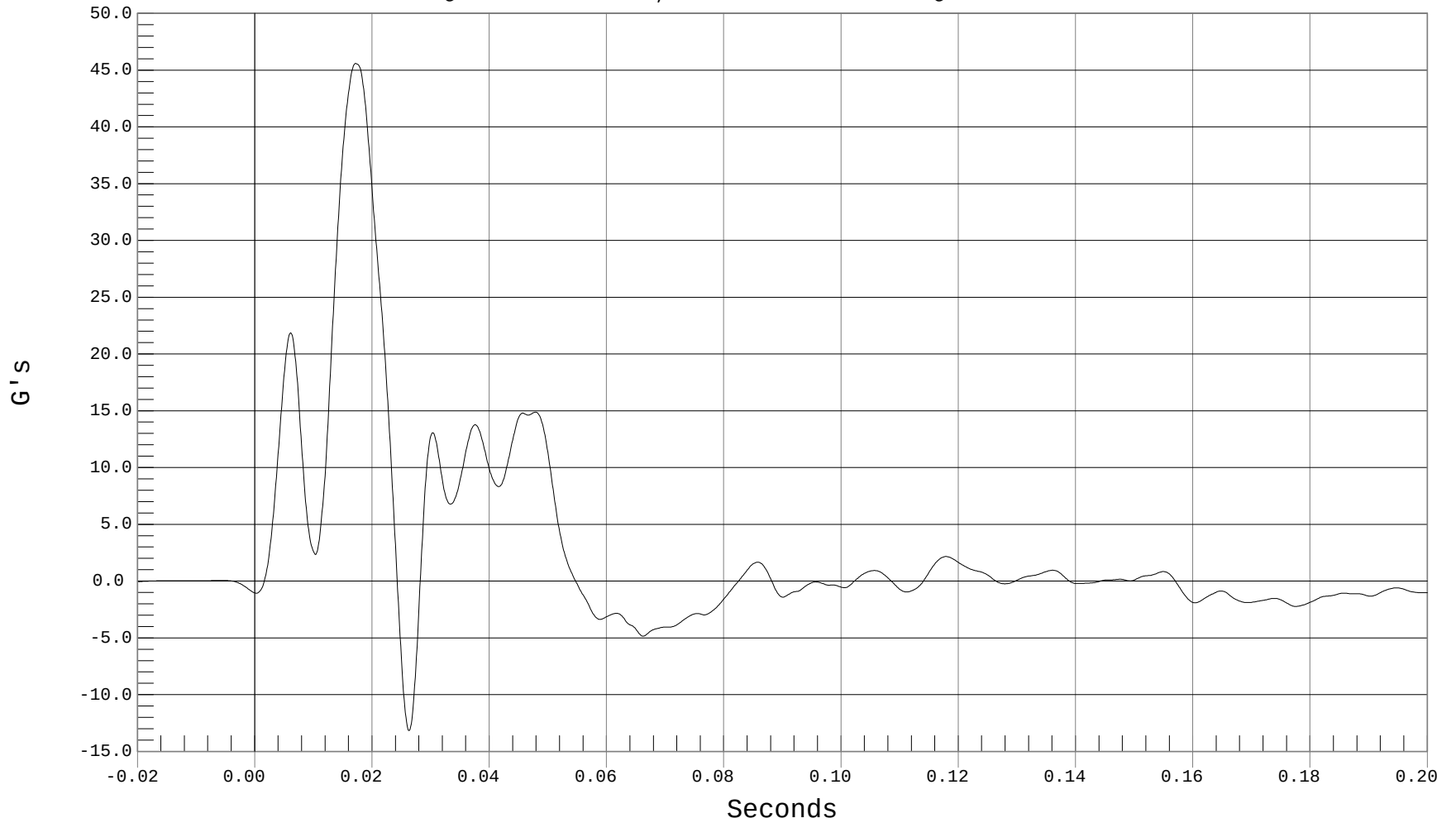
LEFT SIDE SILL AT FRONT SEAT Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 LEFT FRONT SILL Y, B01110AF.A31

Ymin = -13.18 G's @ 0.0262 Seconds, Ymax = 45.59 G's @ 0.0171 Seconds





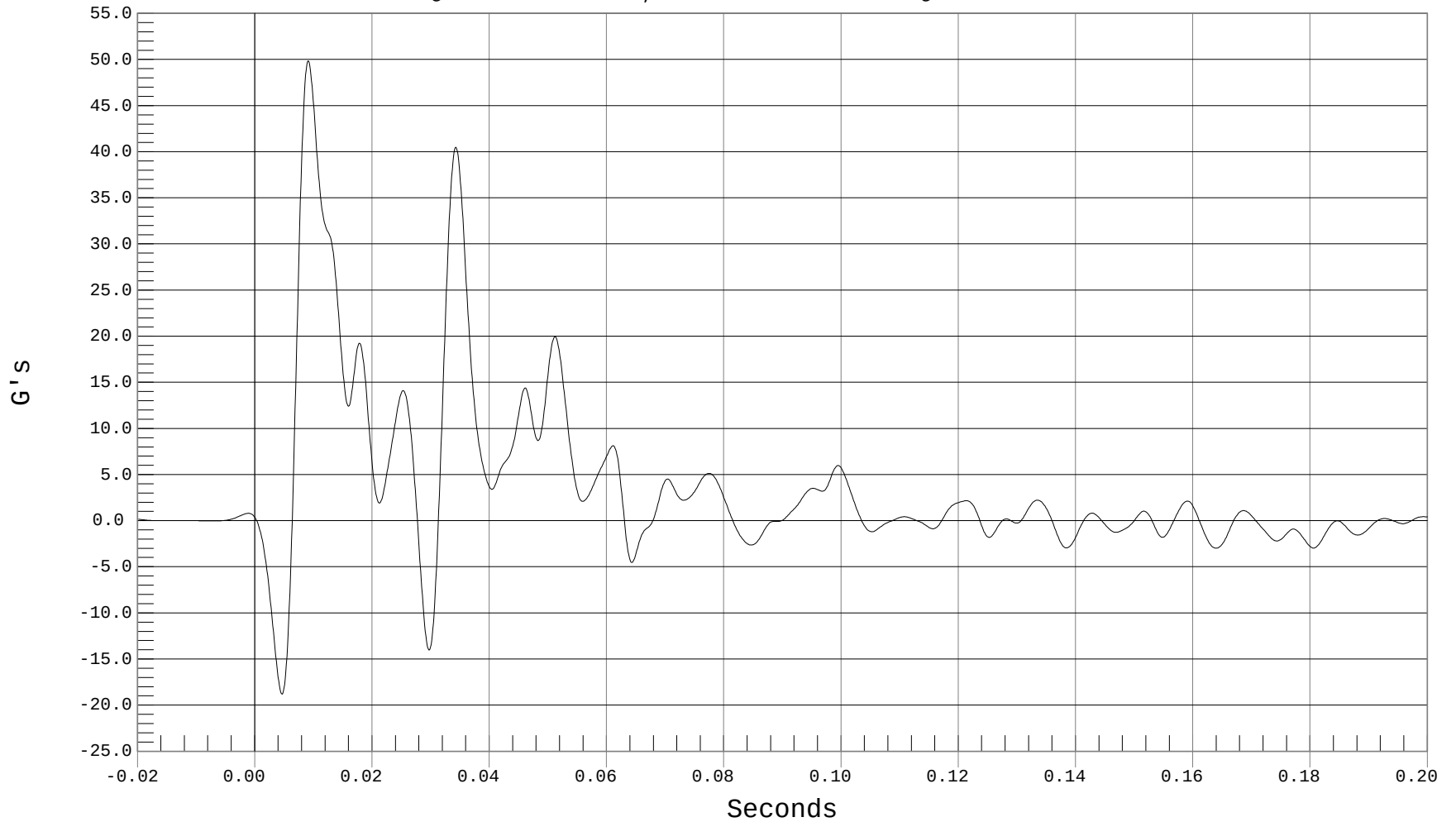
LEFT SIDE SILL AT REAR SEAT Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 LEFT REAR SILL Y, B01110AF.A33

Ymin = -18.8 G's @ 0.0046 Seconds, Ymax = 49.85 G's @ 0.0090 Seconds





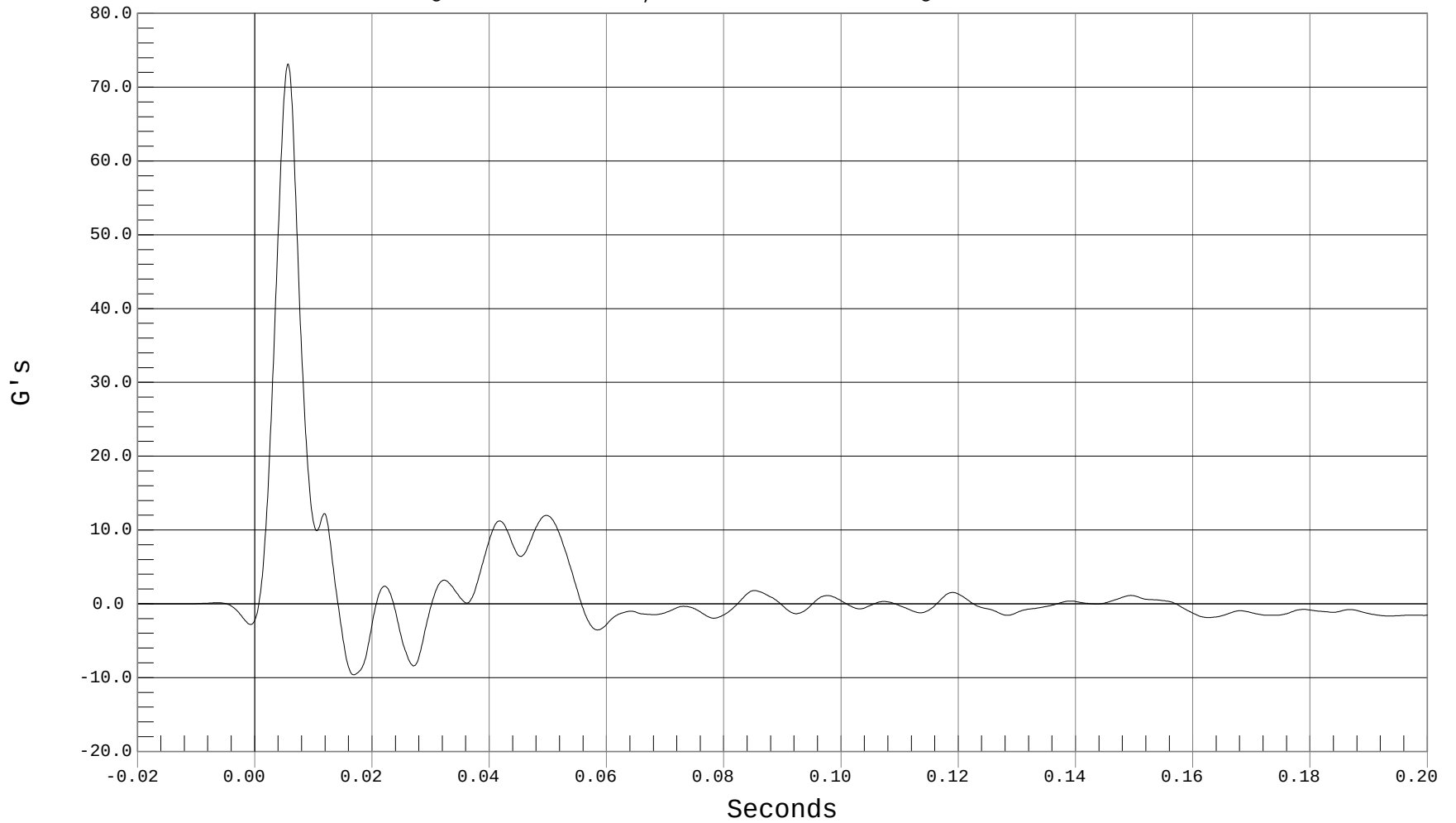
LEFT LOWER A-POST Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 LEFT LOWER A-POST Y, B01110AF.A38

Ymin = -9.62 G's @ 0.0168 Seconds, Ymax = 73.16 G's @ 0.0056 Seconds





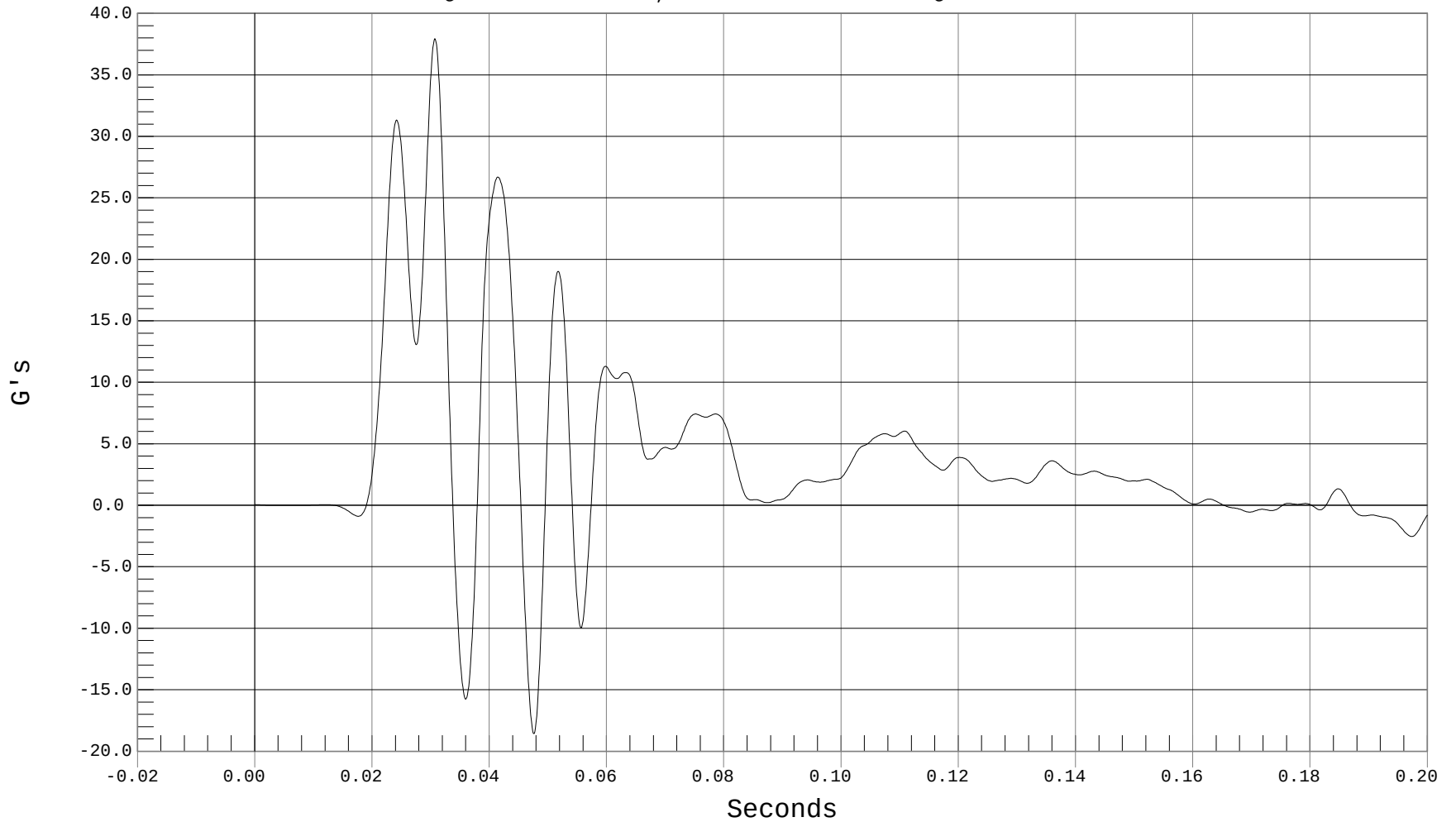
LEFT MID A-POST Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 LEFT MID A-POST Y, B01110AF.A37

Ymin = -18.58 G's @ 0.0475 Seconds, Ymax = 37.93 G's @ 0.0306 Seconds





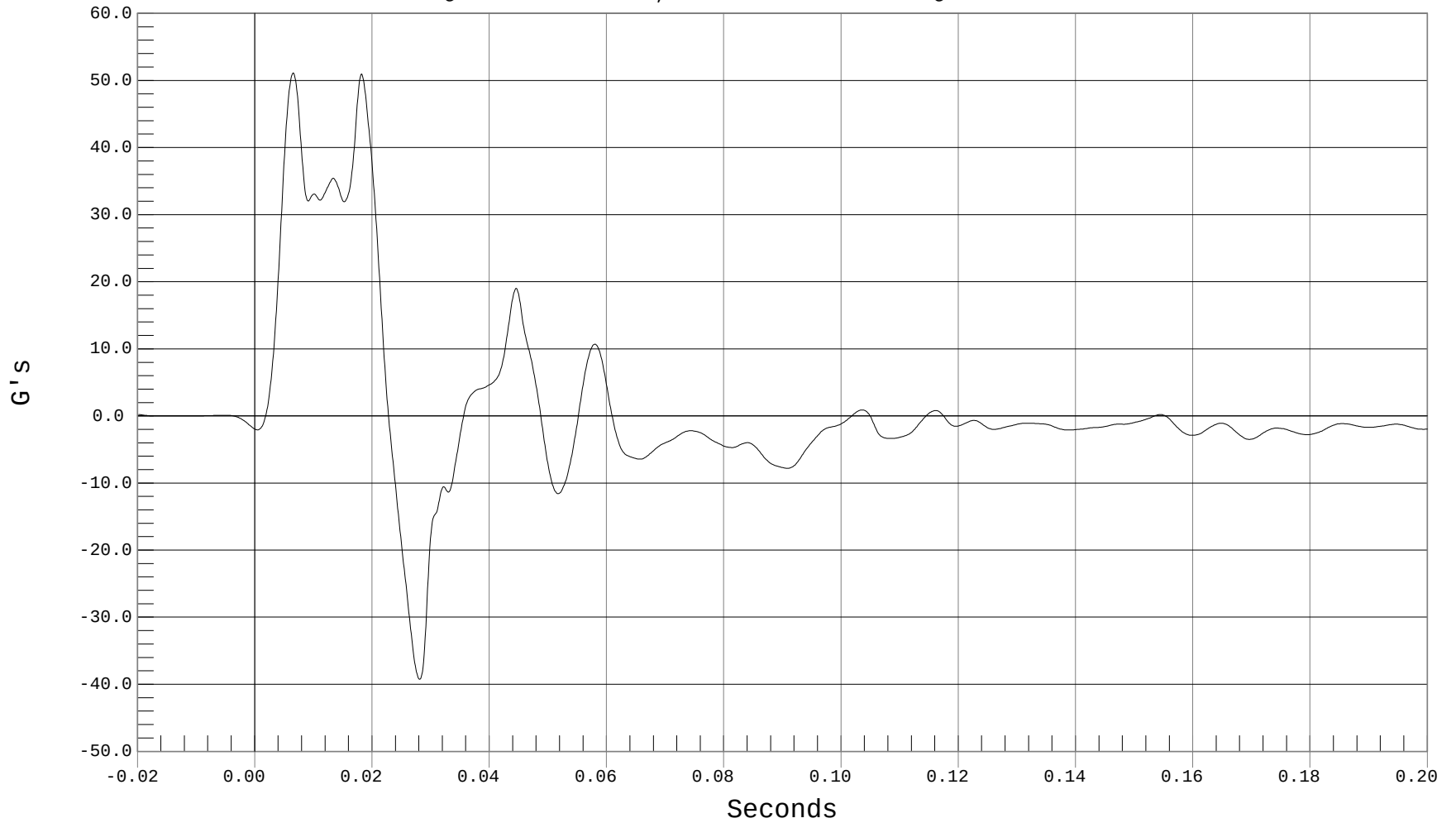
LEFT LOWER B-POST Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 LEFT LOWER B-POST Y, B01110AF.A41

Ymin = -39.26 G's @ 0.0280 Seconds, Ymax = 51.12 G's @ 0.0065 Seconds





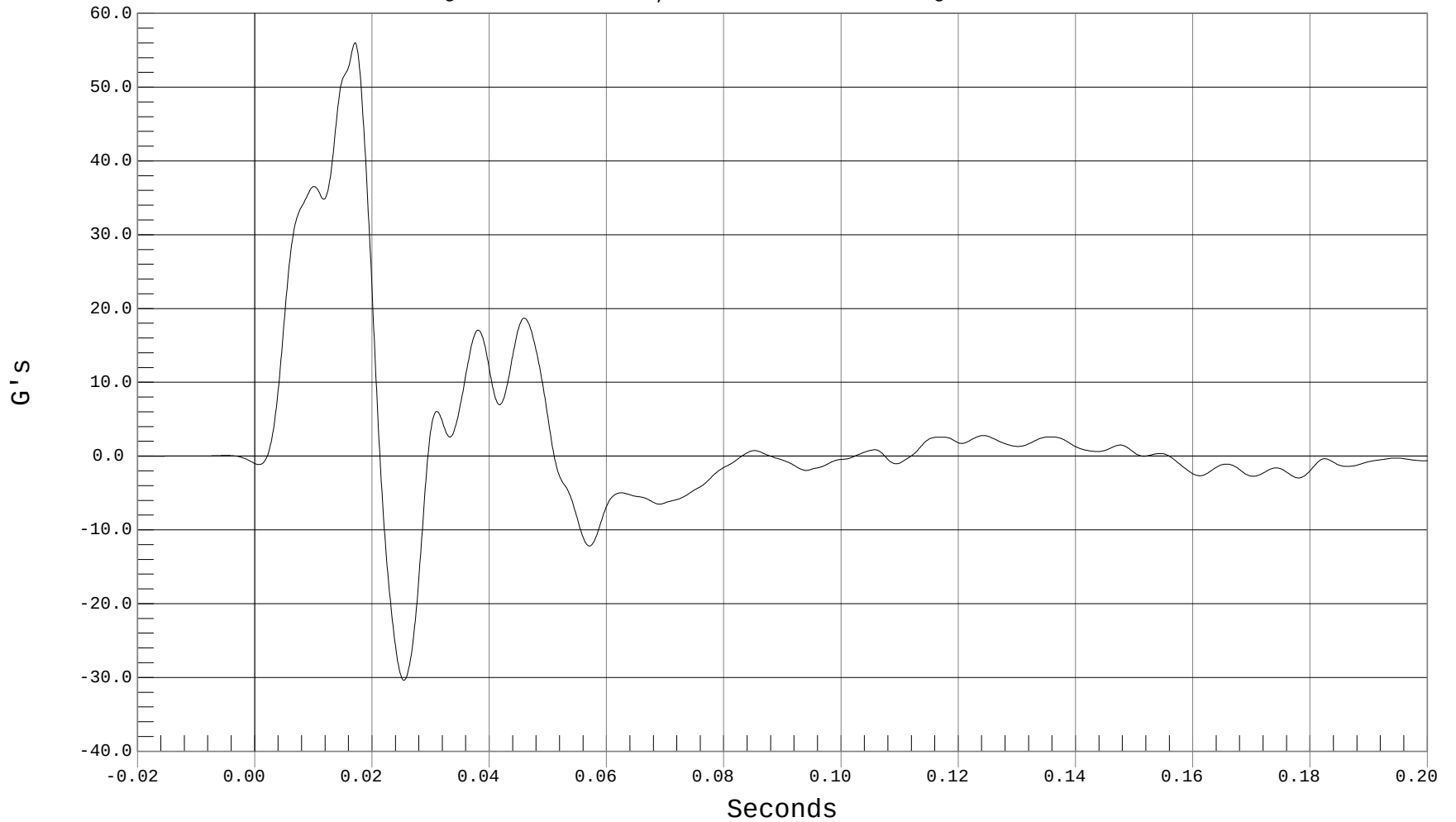
LEFT DRIVER SEAT TRACK Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 DRIVER LEFT SEAT TRACK Y, B01110AF.A42

Ymin = -30.37 G's @ 0.0254 Seconds, Ymax = 56.01 G's @ 0.0170 Seconds





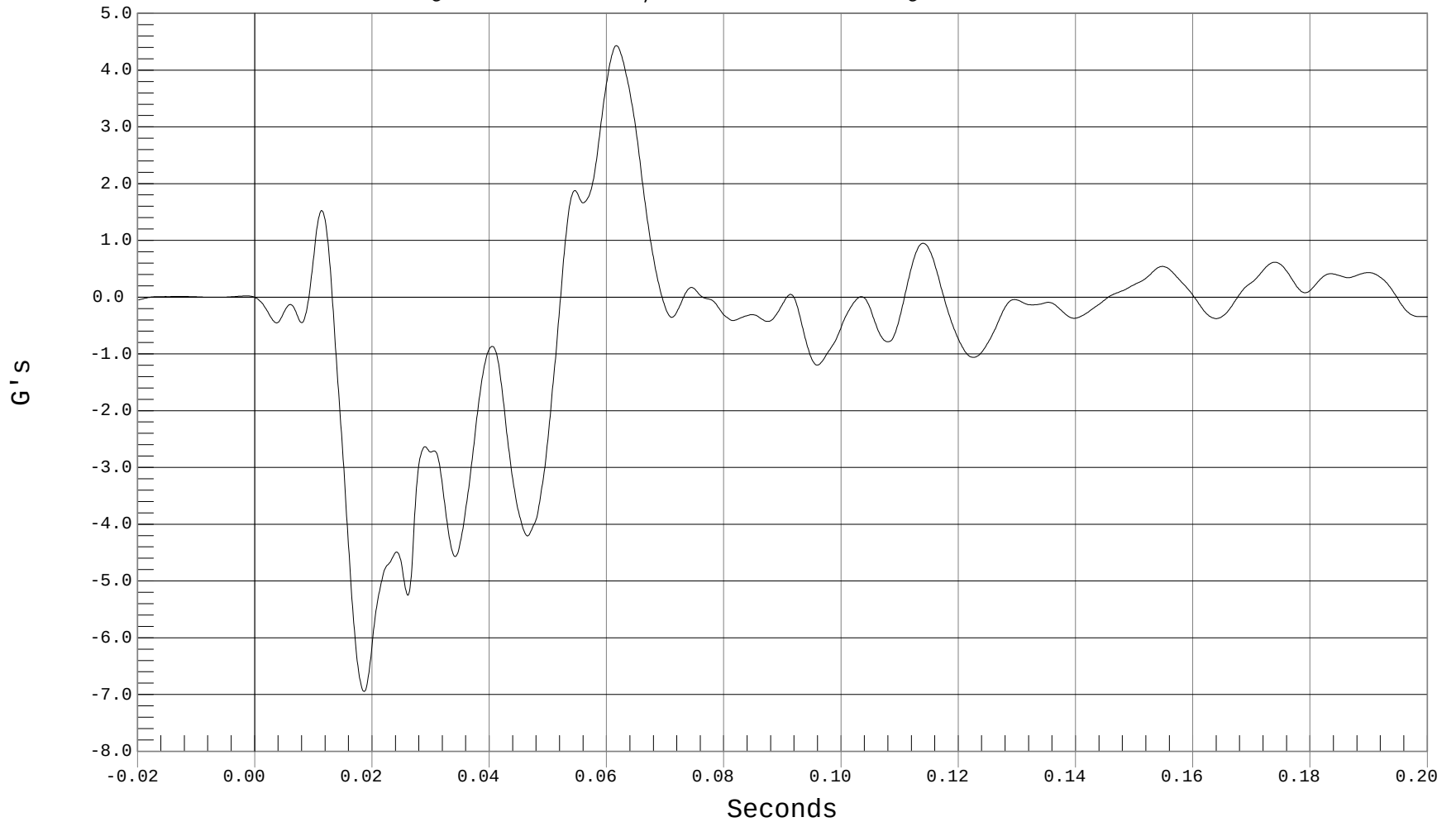
VEHICLE CG X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 VEHICLE CG X, B01110AF.A44

Ymin = -6.95 G's @ 0.0186 Seconds, Ymax = 4.43 G's @ 0.0616 Seconds





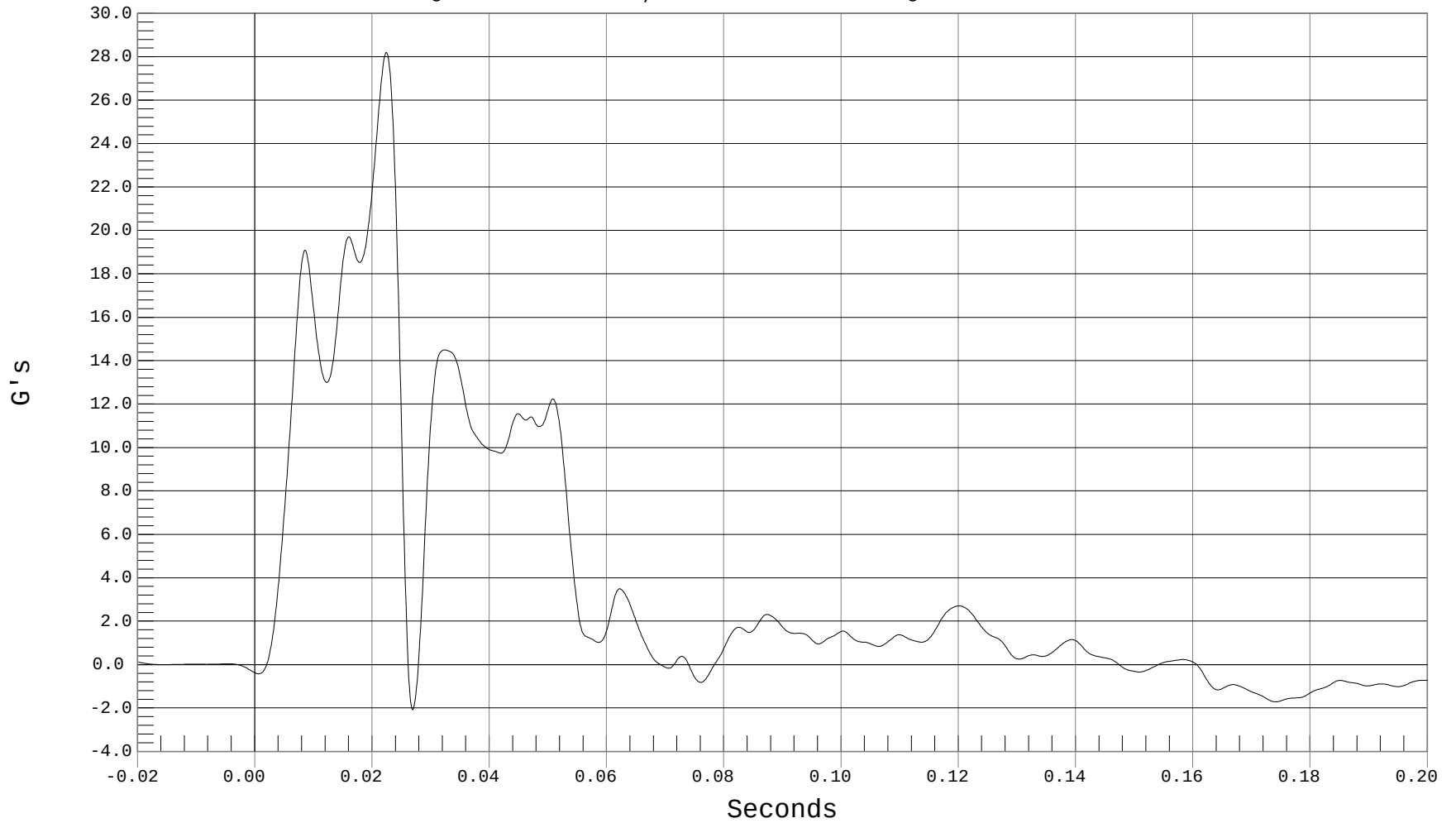
VEHICLE CG Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 VEHICLE CG Y, B01110AF.A45

Ymin = -2.08 G's @ 0.0268 Seconds, Ymax = 28.2 G's @ 0.0224 Seconds





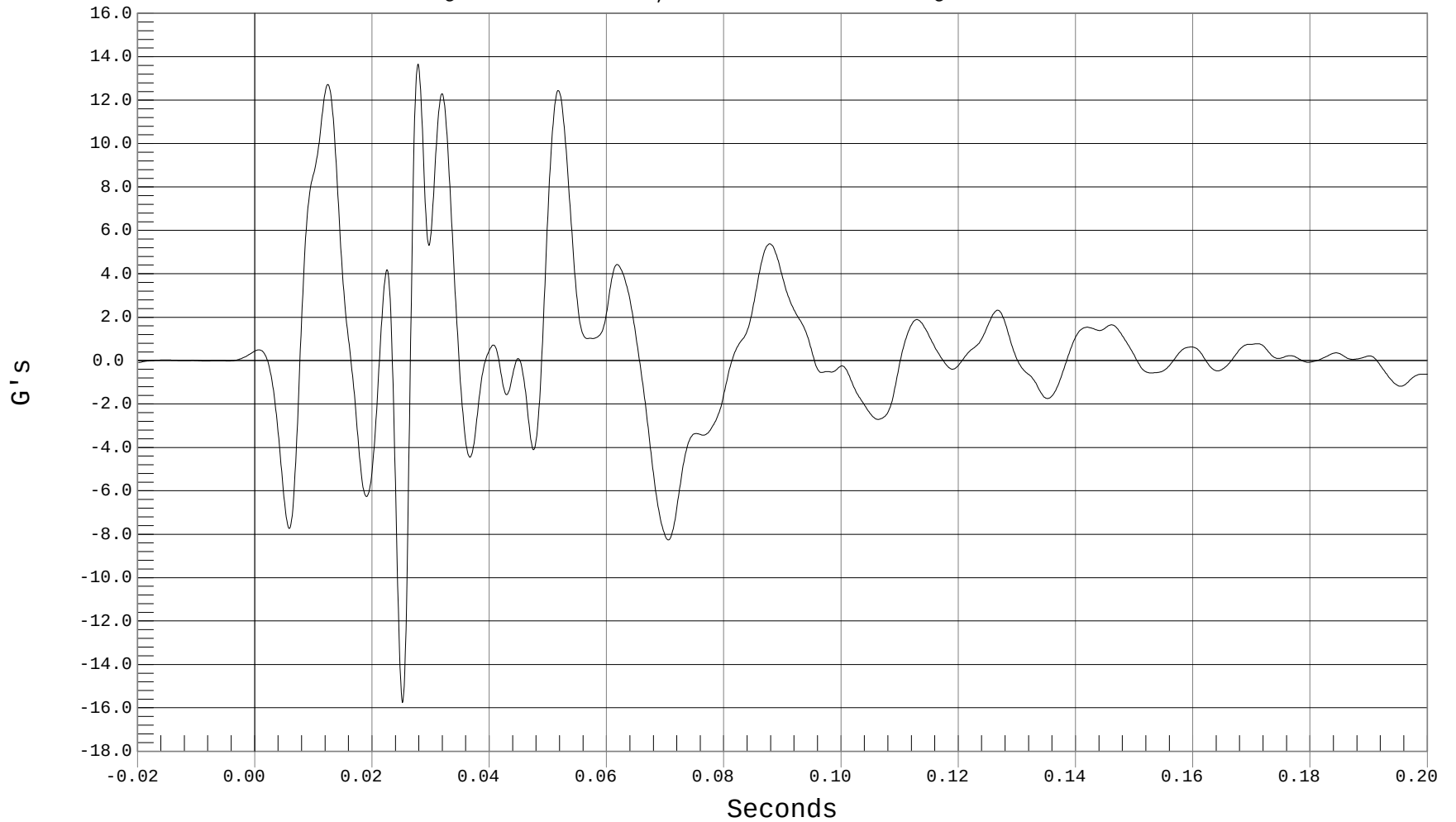
VEHICLE CG Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 VEHICLE CG Z, B01110AF.A46

Ymin = -15.76 G's @ 0.0251 Seconds, Ymax = 13.66 G's @ 0.0278 Seconds





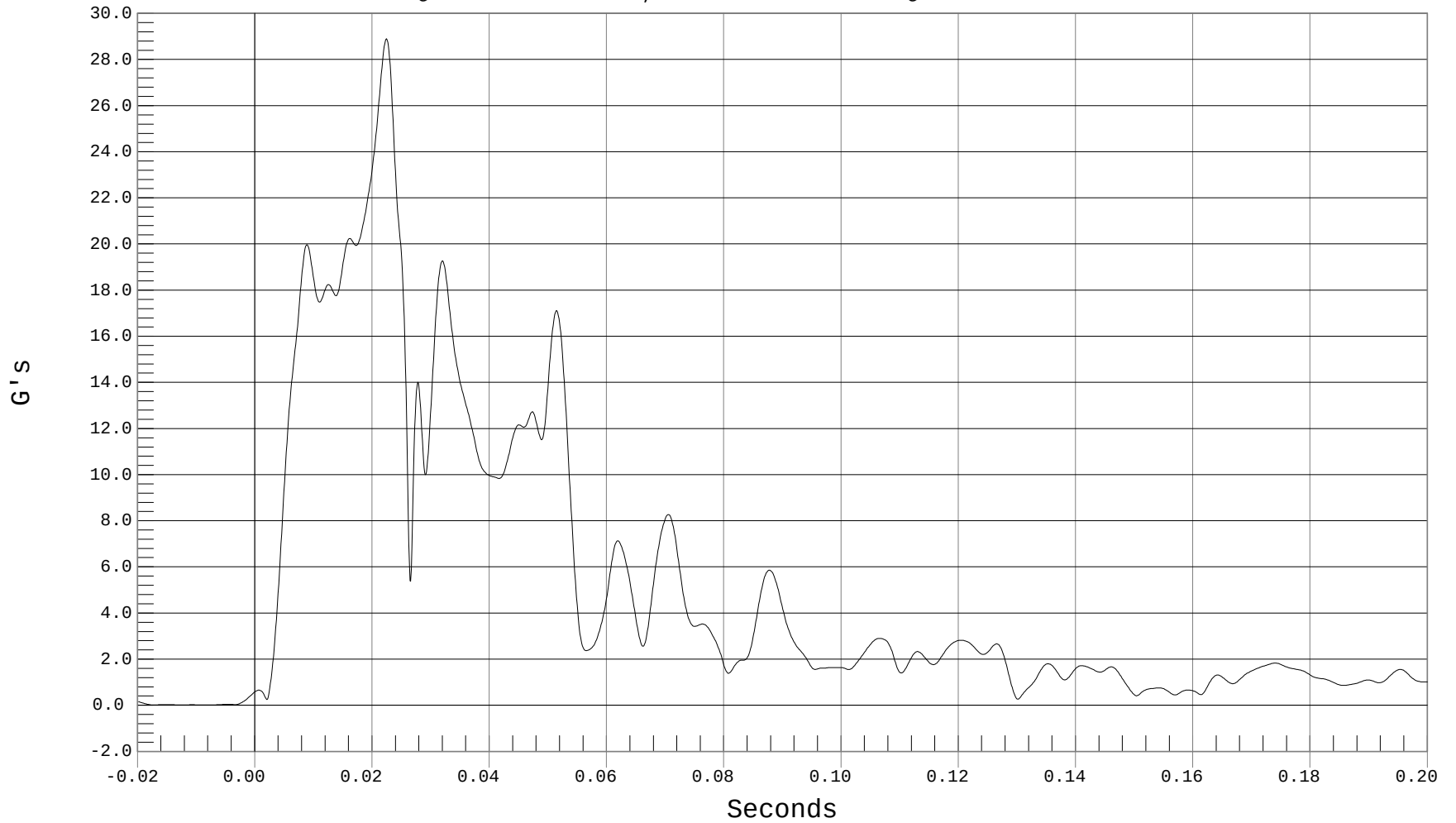
VEHICLE CG RESULTANT ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 VEHICLE CG RESULTANT ACCELERATION, B01110AV.A44

Ymin = .01 G's @ -0.0173 Seconds, Ymax = 28.9 G's @ 0.0224 Seconds





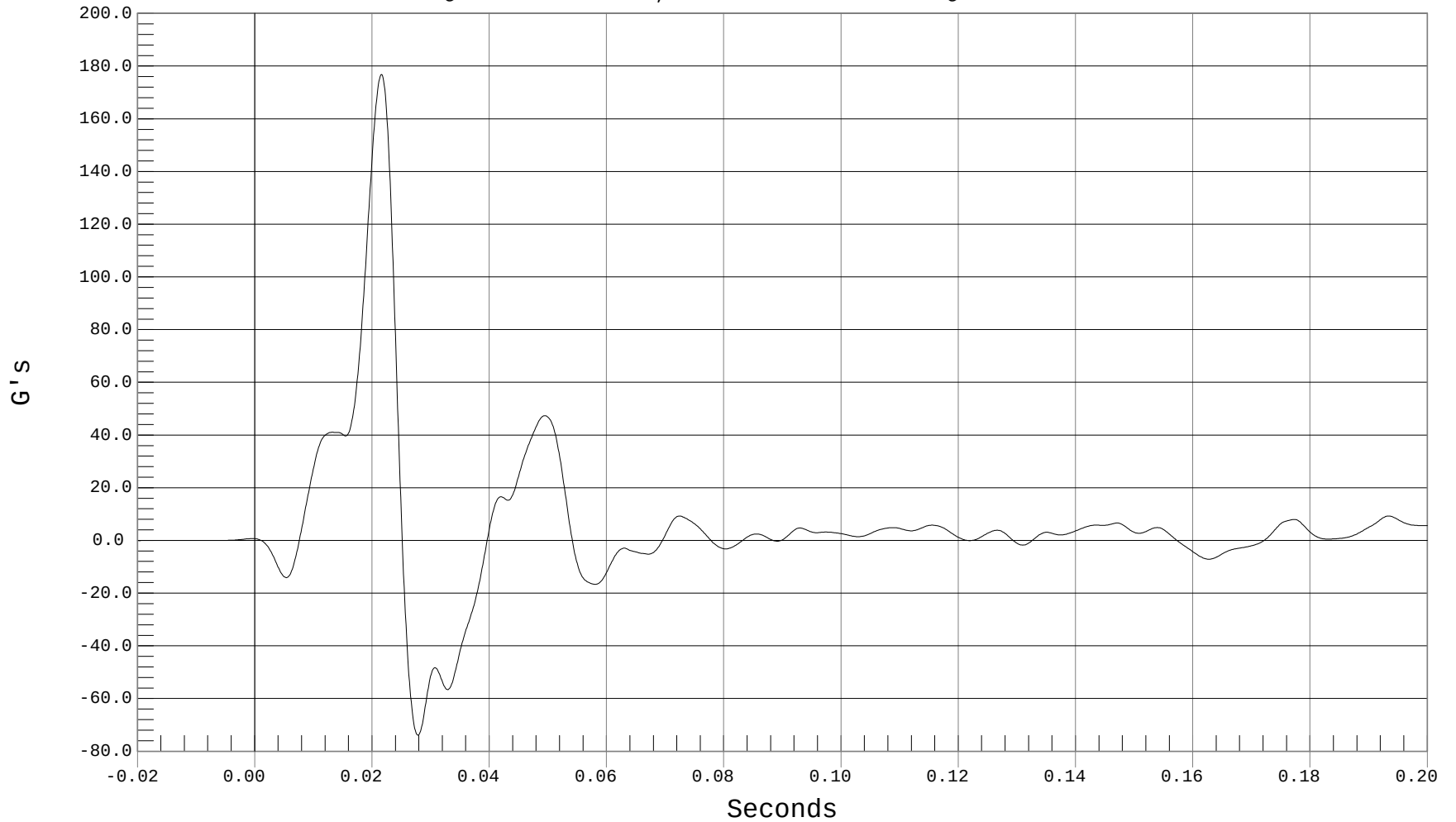
LEFT REAR DOOR @ MID RIB Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 LEFT REAR DOOR @ MID RIB Y, B01110AF.A47

Ymin = -73.94 G's @ 0.0278 Seconds, Ymax = 176.77 G's @ 0.0215 Seconds





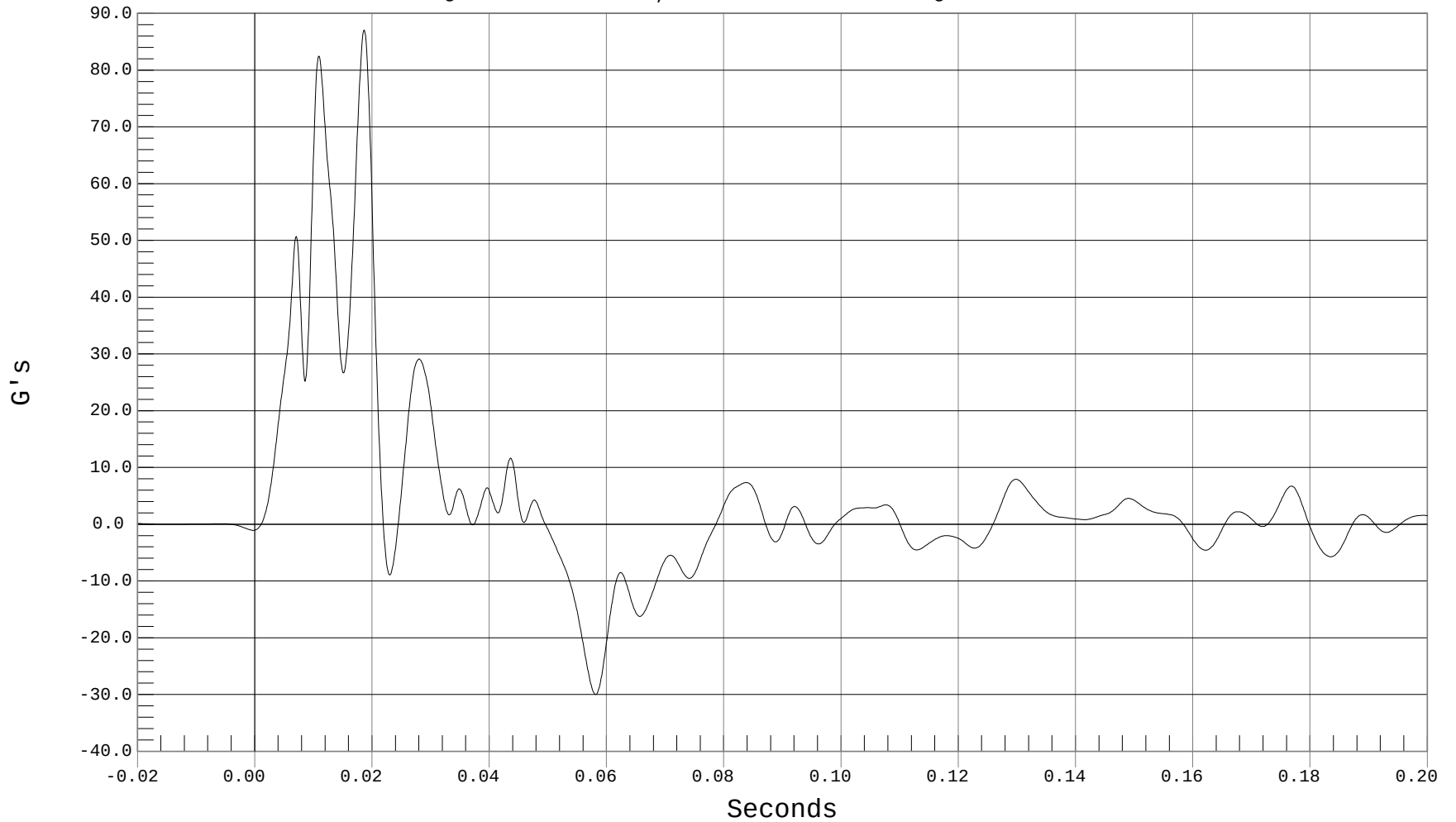
LEFT REAR DOOR @ PELVIS Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 LEFT REAR DOOR @ PELVIS Y, B01110AF.A48

Ymin = -30.01 G's @ 0.0580 Seconds, Ymax = 87.07 G's @ 0.0186 Seconds





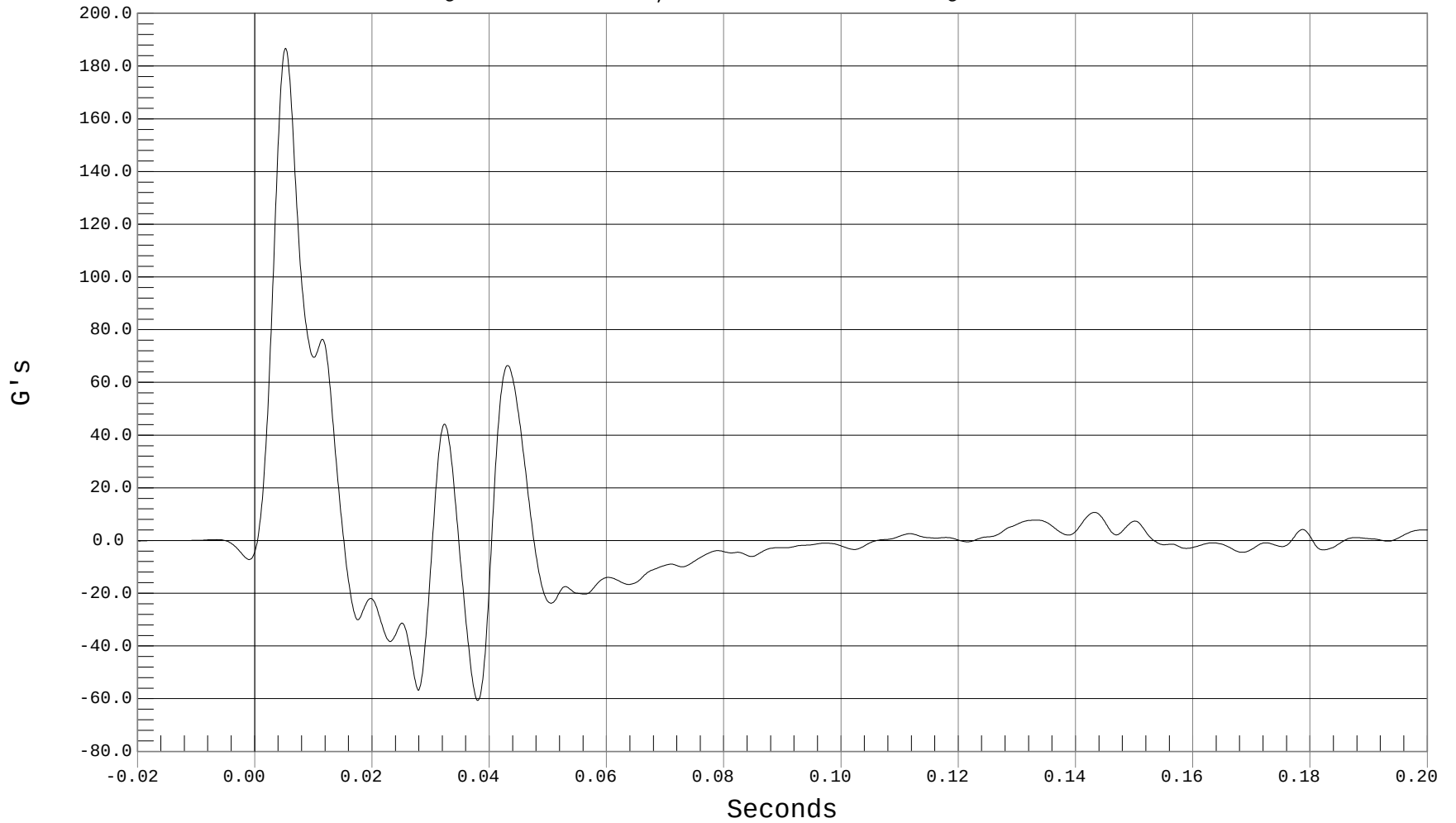
LEFT REAR DOOR @ KNEE Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 LEFT REAR DOOR @ KNEE Y, B01110AF.A49

Ymin = -60.71 G's @ 0.0380 Seconds, Ymax = 186.75 G's @ 0.0052 Seconds





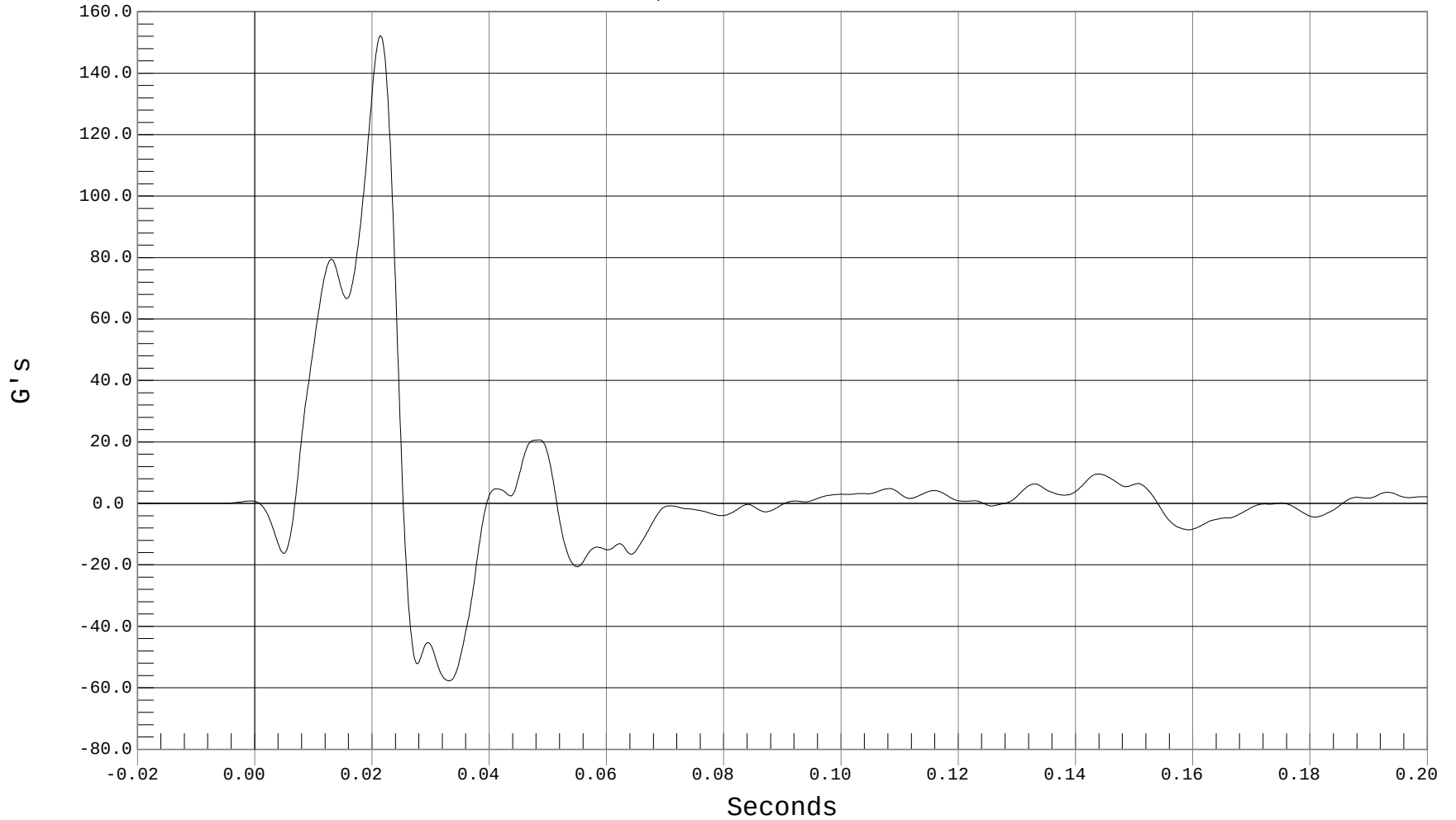
LEFT REAR DOOR @ ARM Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 LEFT REAR DOOR @ ARM, B01110AF.A50

Ymin = -57.72 G's @ 0.0331 Seconds, Ymax = 152.16 G's @ 0.0214 Seconds





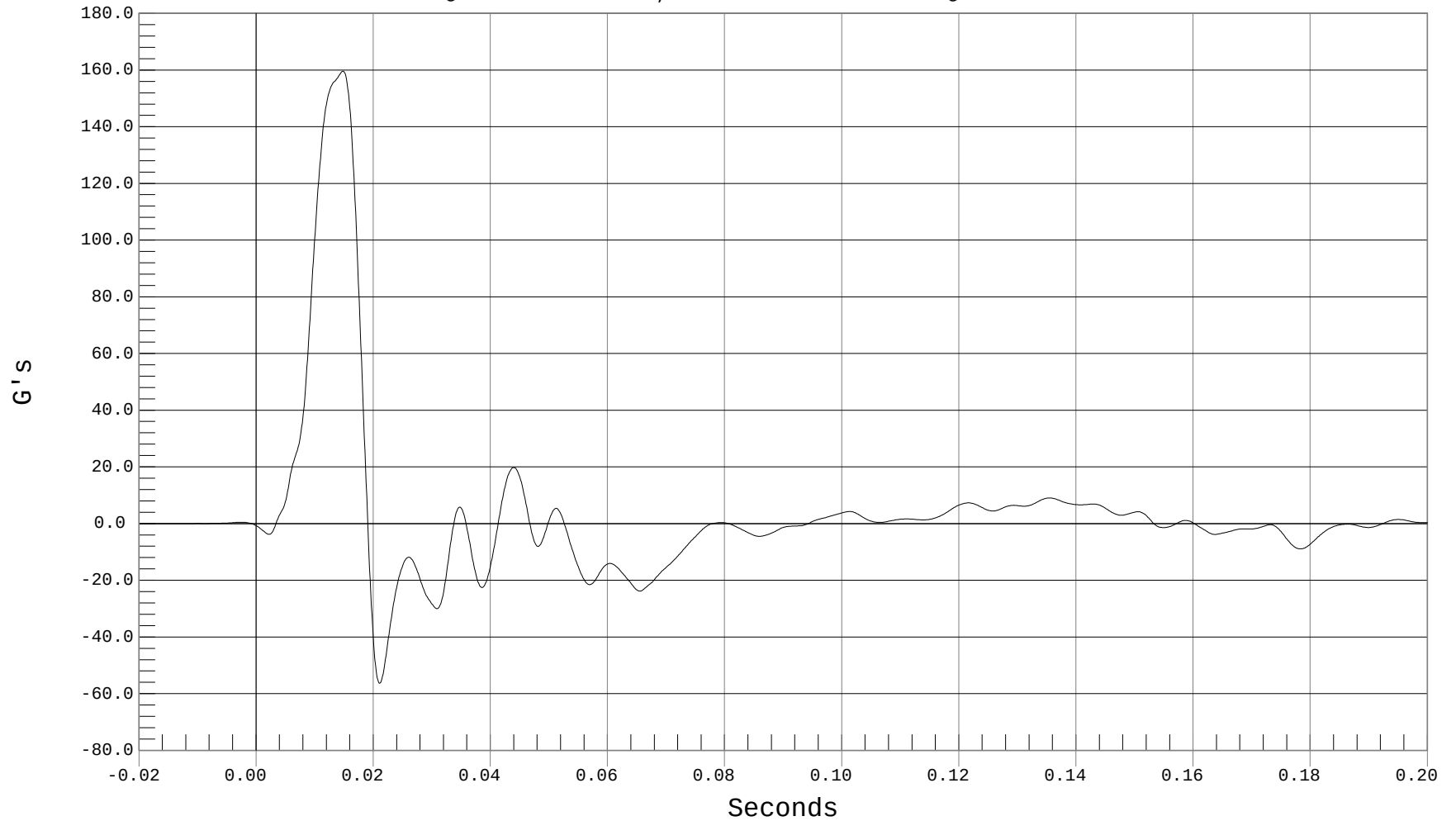
LEFT FRONT DOOR @ MID RIB Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 LEFT FRONT DOOR @ MID RIB, B01110AF.A51

Ymin = -56.37 G's @ 0.0210 Seconds, Ymax = 159.59 G's @ 0.0148 Seconds





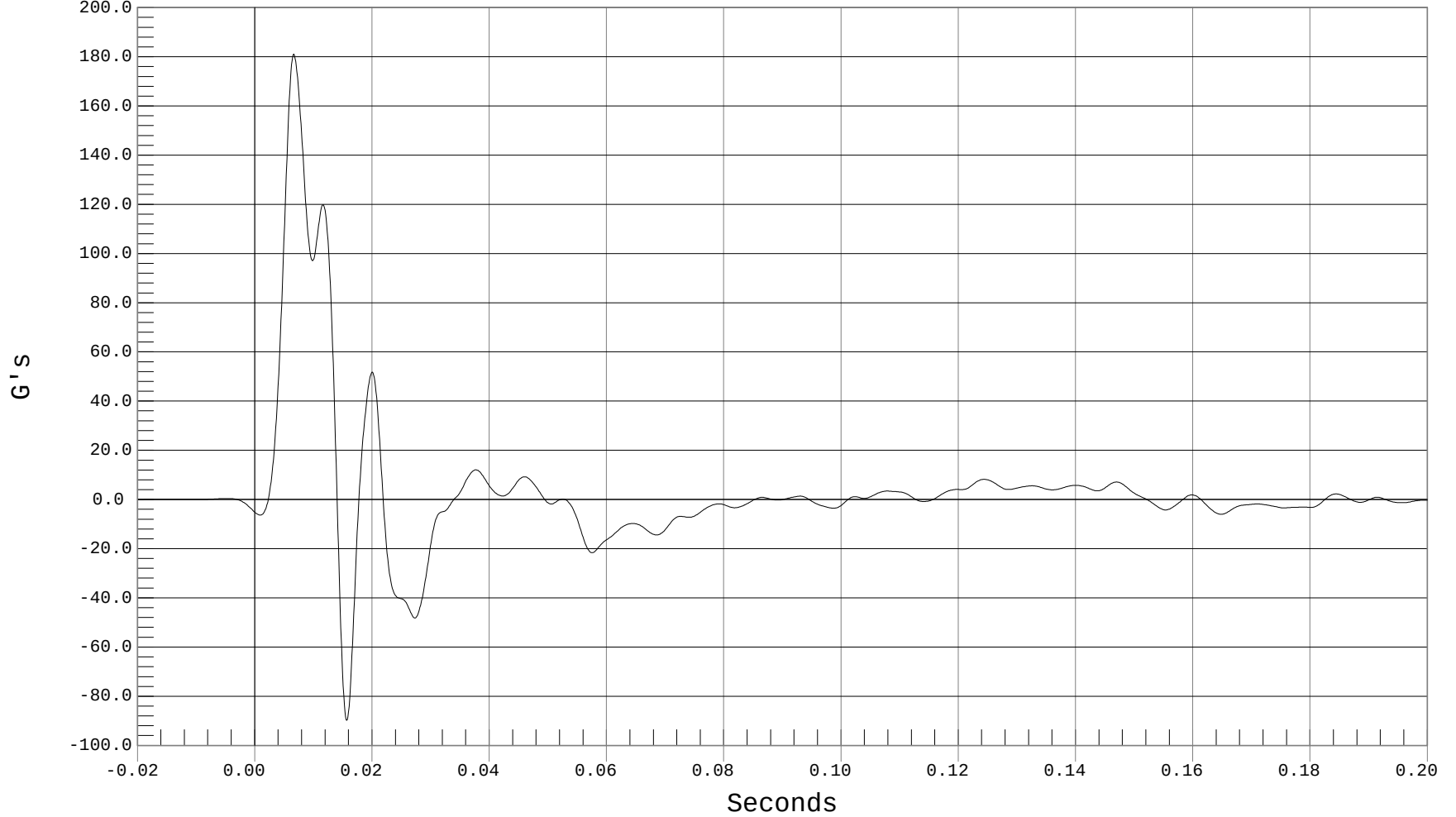
LEFT FRONT DOOR @ PELVIS Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 LEFT FRONT DOOR @ PELVIS, B01110AF.A52

Ymin = -89.8 G's @ 0.0156 Seconds, Ymax = 181.06 G's @ 0.0066 Seconds





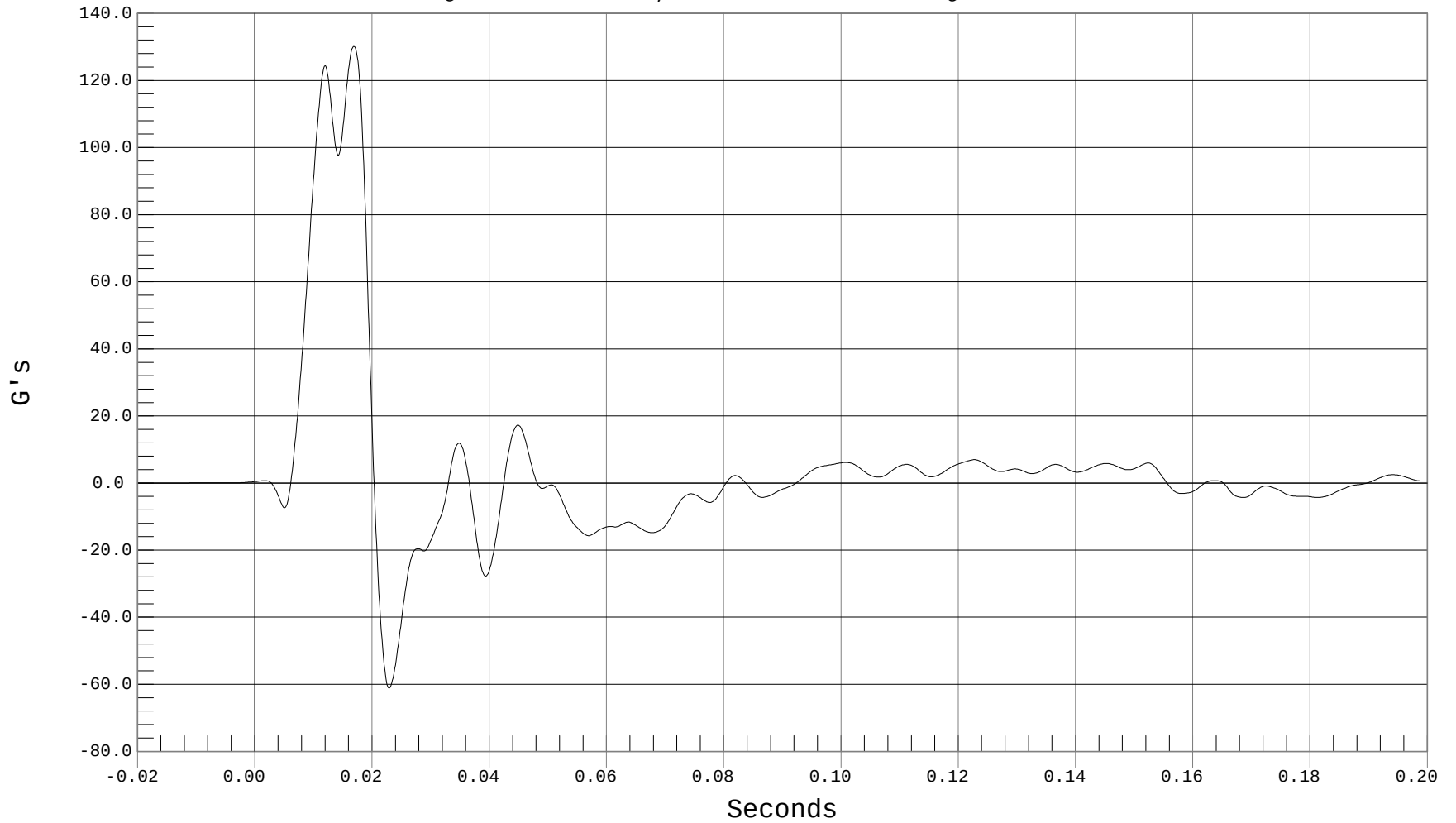
LEFT FRONT DOOR @ ARM Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 LEFT FRONT DOOR @ ARM, B01110AF.A54

Ymin = -61.12 G's @ 0.0228 Seconds, Ymax = 130.17 G's @ 0.0168 Seconds





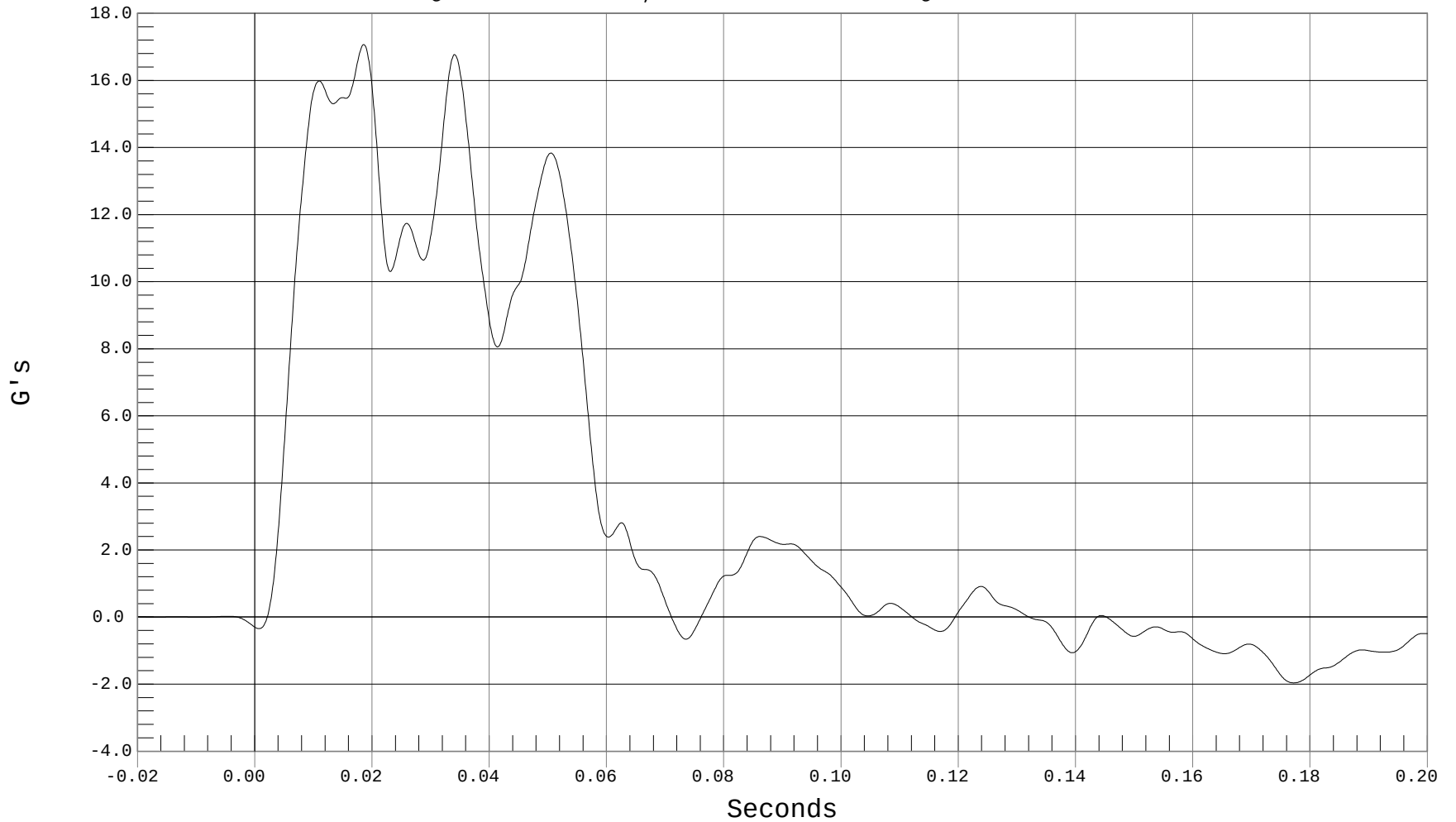
RIGHT REAR OCCUPANT COMPARTMENT Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 RIGHT REAR OCC. COMPARTMENT Y, B01110AF.A62

Ymin = -1.96 G's @ 0.1771 Seconds, Ymax = 17.07 G's @ 0.0185 Seconds





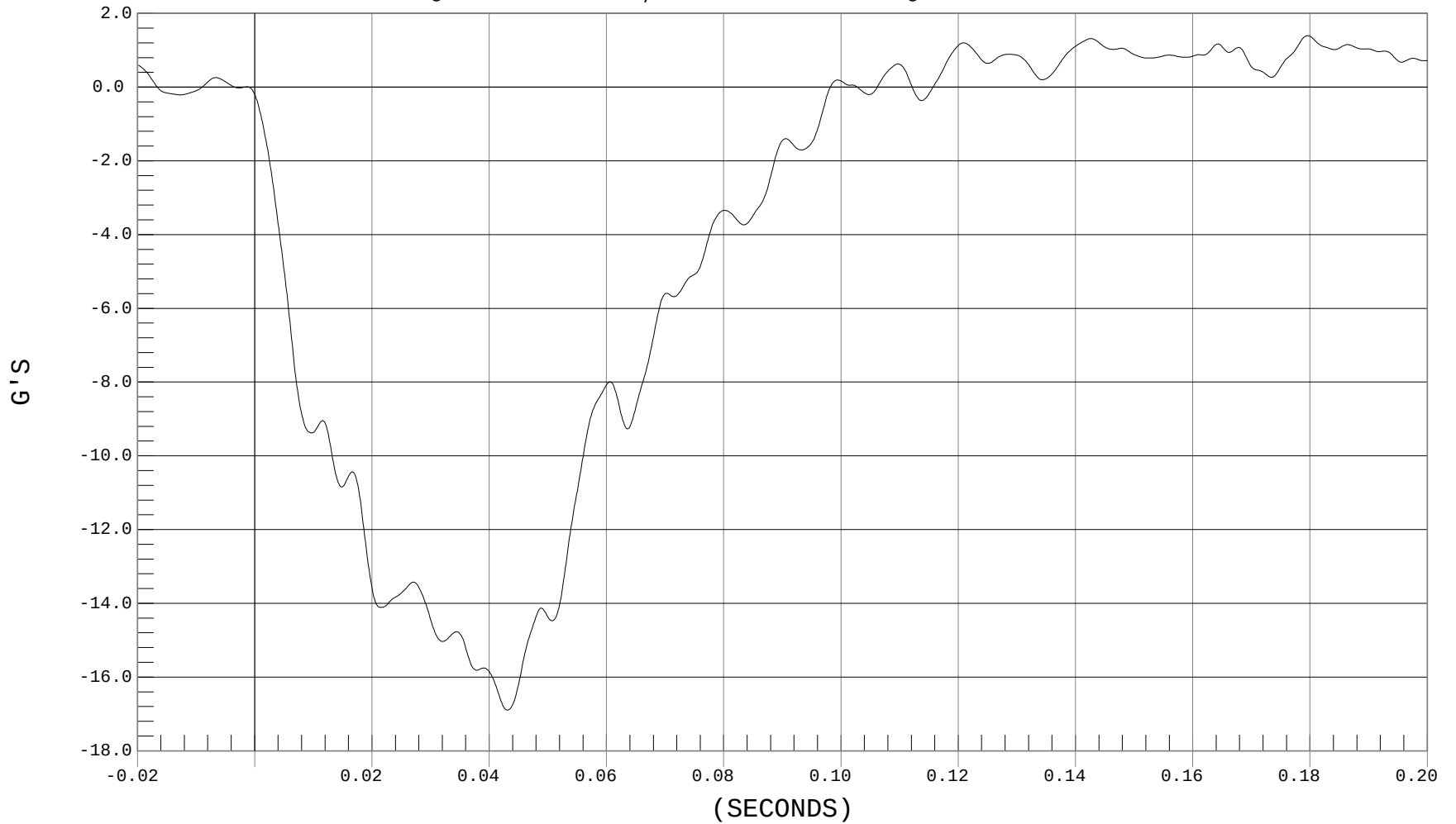
MOVING BARRIER CG X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LeSABRE 4 DOOR
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 CART CG X ACCELERATION, B01110AF.A07

Ymin = -16.9 G'S @ 0.0430 SECONDS, Ymax = 1.39 G'S @ 0.1795 SECONDS





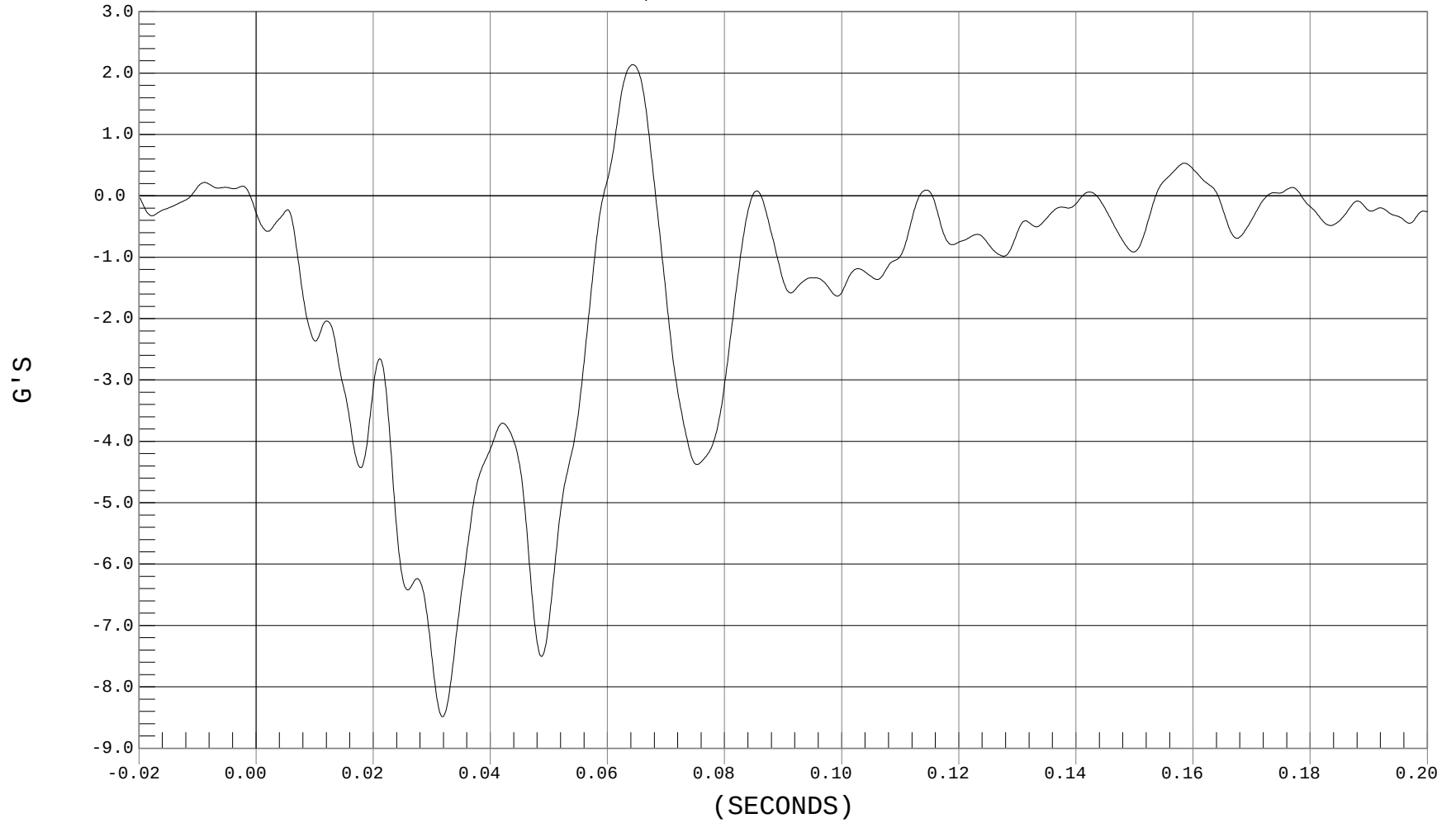
MOVING BARRIER CG Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LeSABRE 4 D00R
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 CART CG Y ACCELERATION, B01110AF.A03

Ymin = -8.49 G'S @ 0.0318 SECONDS, Ymax = 2.14 G'S @ 0.0642 SECONDS





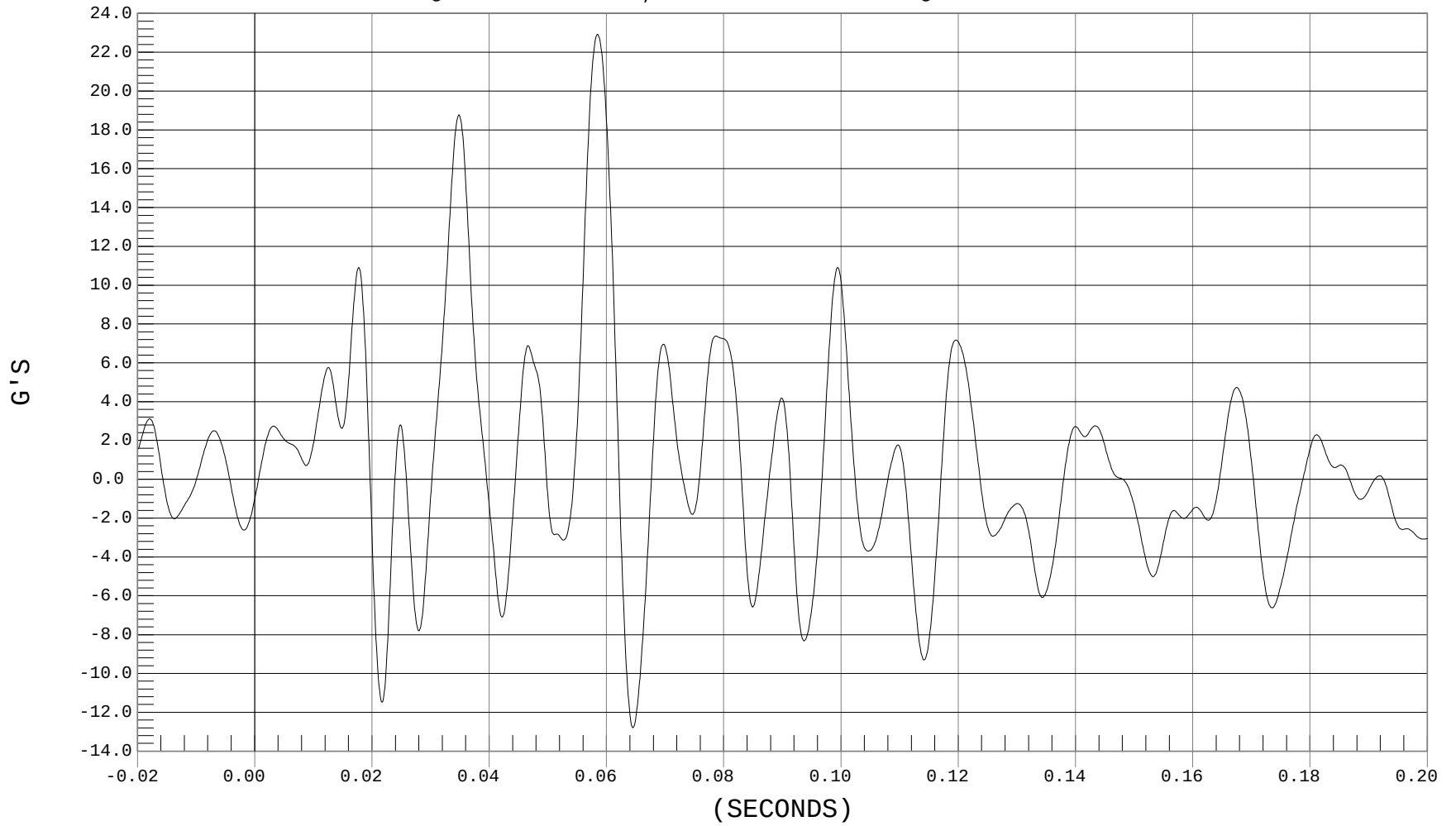
MOVING BARRIER CG Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LeSABRE 4 DOOR
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 CART CG Z ACCELERATION, B01110AF.A04

Ymin = -12.8 G'S @ 0.0644 SECONDS, Ymax = 22.92 G'S @ 0.0584 SECONDS





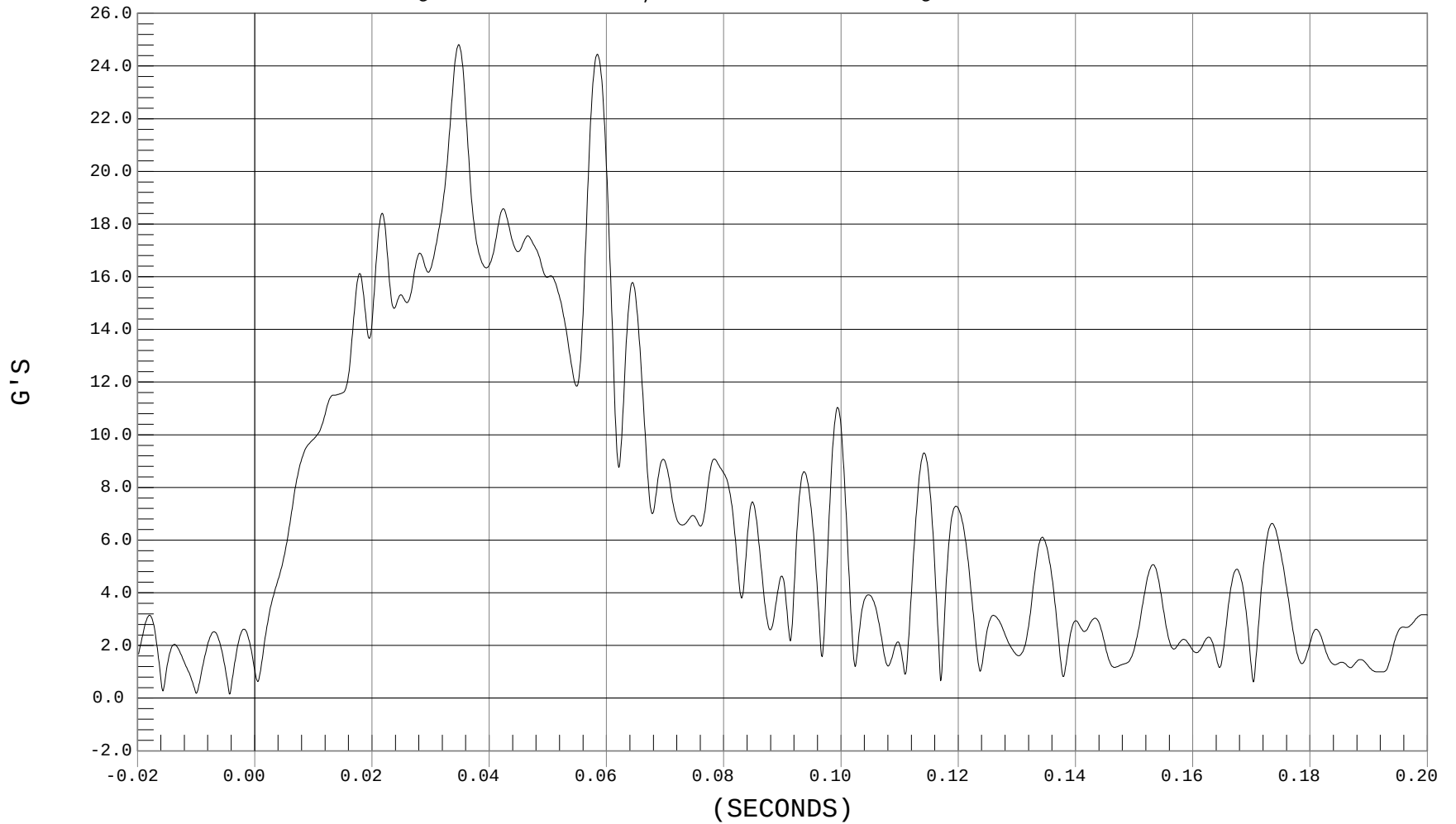
MOVING BARRIER CG RESULTANT ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LeSABRE 4 D00R
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 MOVING BARRIER CG RESULTANT ACCELERATION, B01110AV.A03

Ymin = .16 G'S @ -0.0044 SECONDS, Ymax = 24.81 G'S @ 0.0347 SECONDS





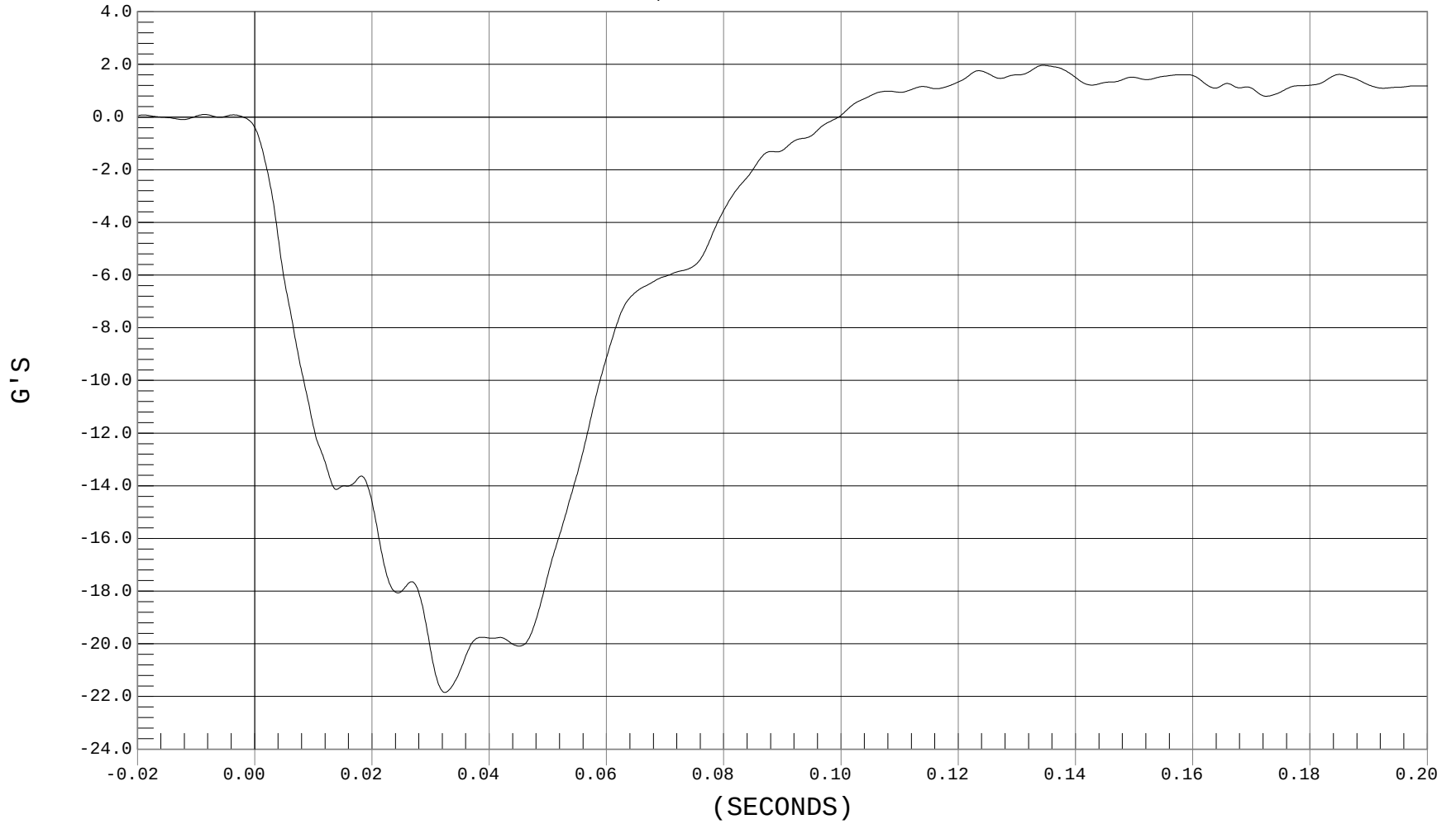
MOVING BARRIER REAR AXLE X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LeSABRE 4 D00R
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 CART REAR AXLE X ACCELERATION, B01110AF.A05

Ymin = -21.84 G'S @ 0.0323 SECONDS, Ymax = 1.97 G'S @ 0.1344 SECONDS





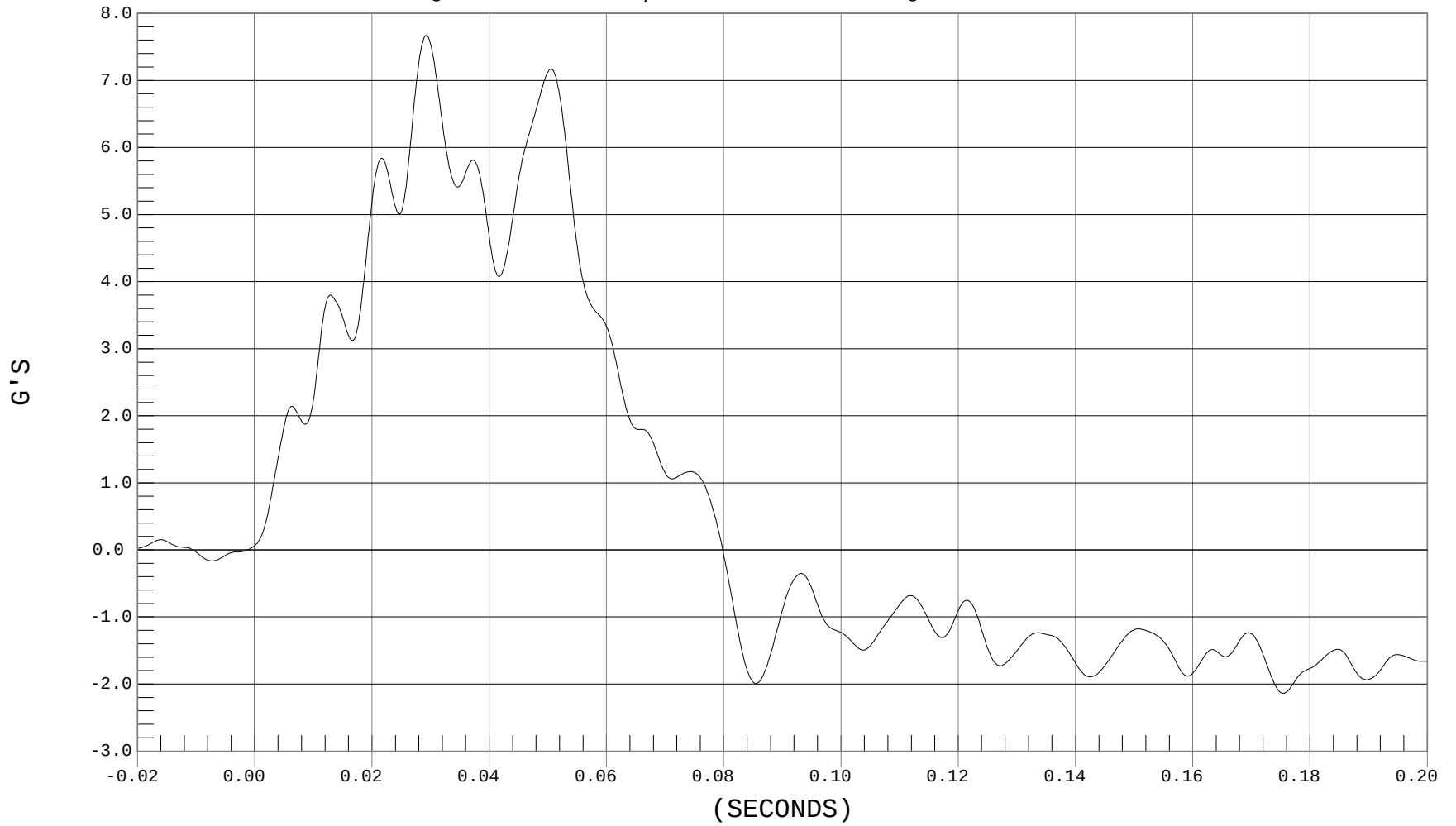
MOVING BARRIER REAR AXLE Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LeSABRE 4 D00R
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 60

— 1 CART REAR AXLE Y ACCELERATION, B01110AF.A06

Ymin = -2.14 G'S @ 0.1753 SECONDS, Ymax = 7.67 G'S @ 0.0292 SECONDS





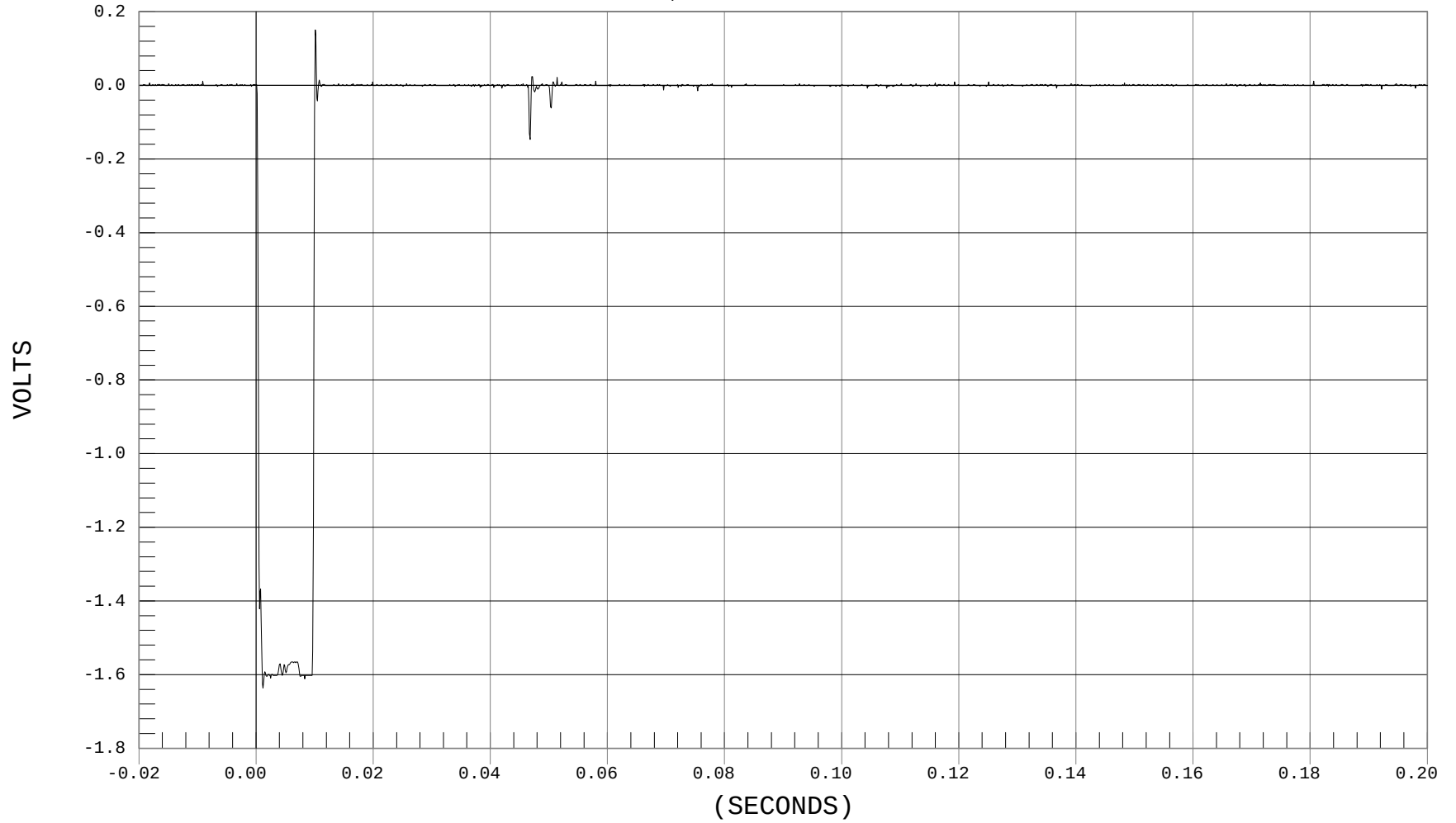
LEFT BARRIER CONTACT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LeSABRE 4 DOOR
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 LEFT CONTACT, B011100T.010

Ymin = -1.64 VOLTS @ 0.0011 SECONDS, Ymax = .15 VOLTS @ 0.0100 SECONDS





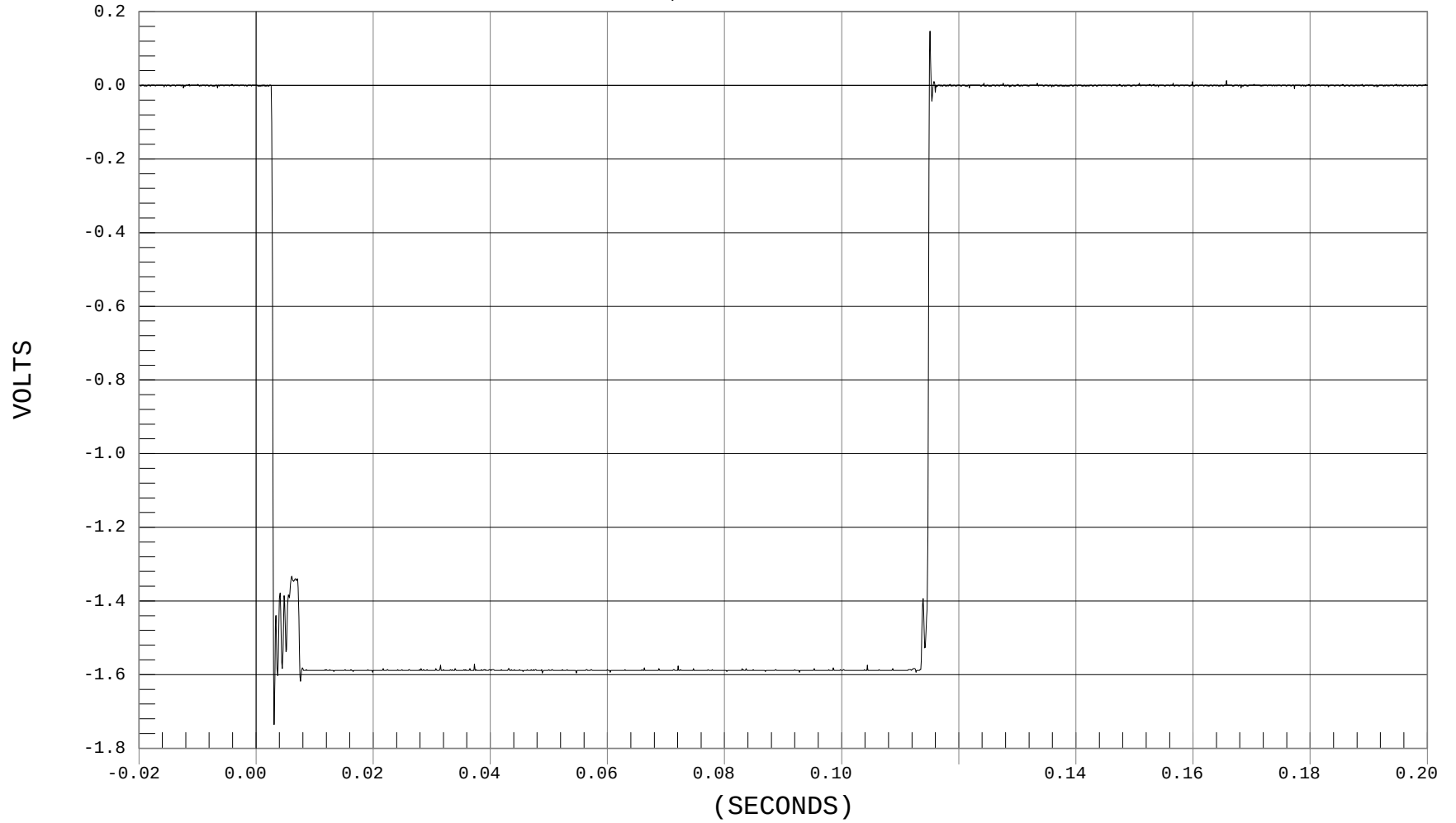
RIGHT BARRIER CONTACT

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LeSABRE 4 DOOR
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Filter Class: 1000

— 1 RIGHT CONTACT, B011100T.009

Ymin = -1.74 VOLTS @ 0.0030 SECONDS, Ymax = .15 VOLTS @ 0.1150 SECONDS





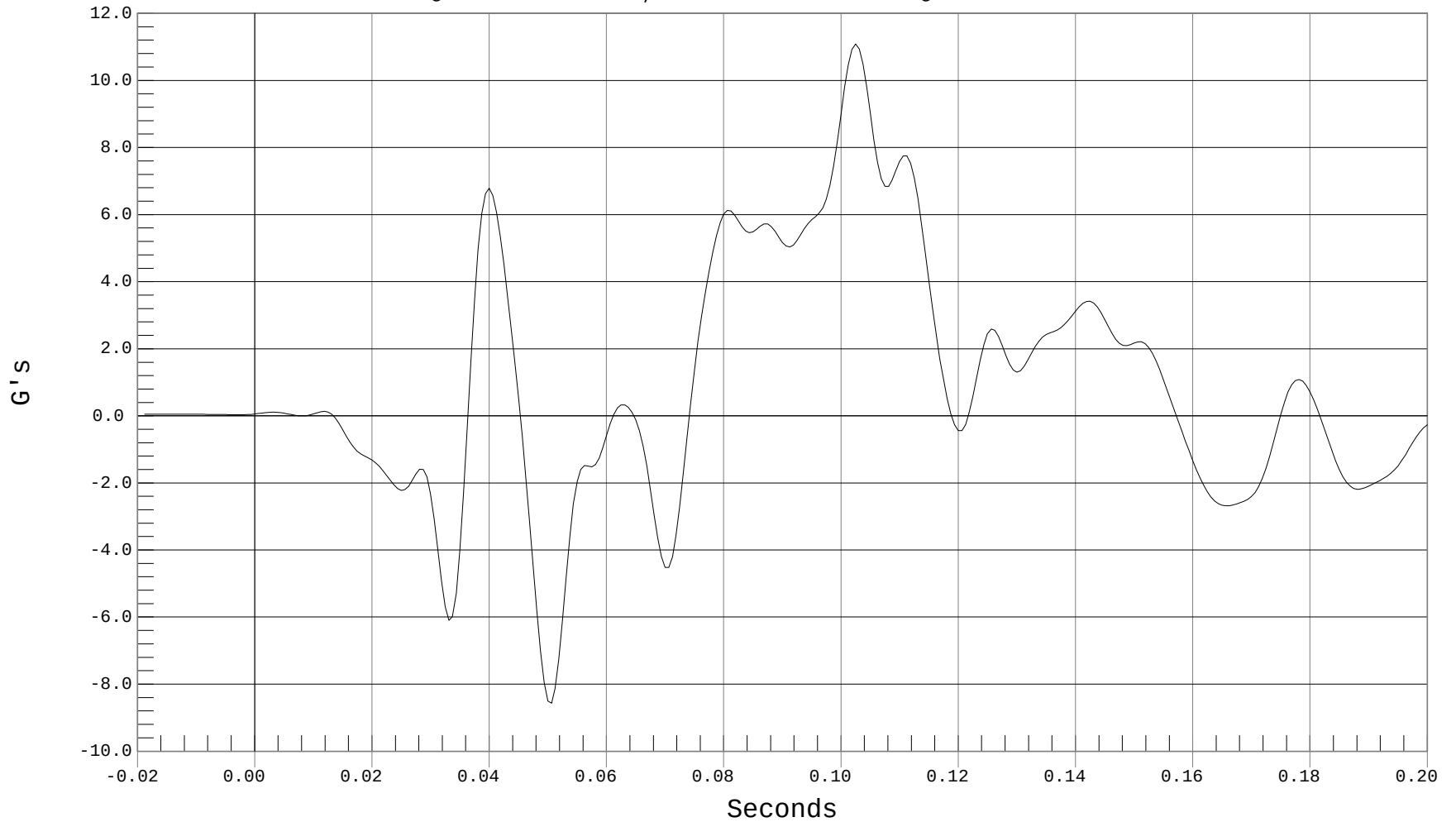
DRIVER UPPER SPINE X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 DRIVER UPPER SPINE X, B01110FI.R20

Ymin = -8.57 G's @ 0.0505 Seconds, Ymax = 11.09 G's @ 0.1024 Seconds





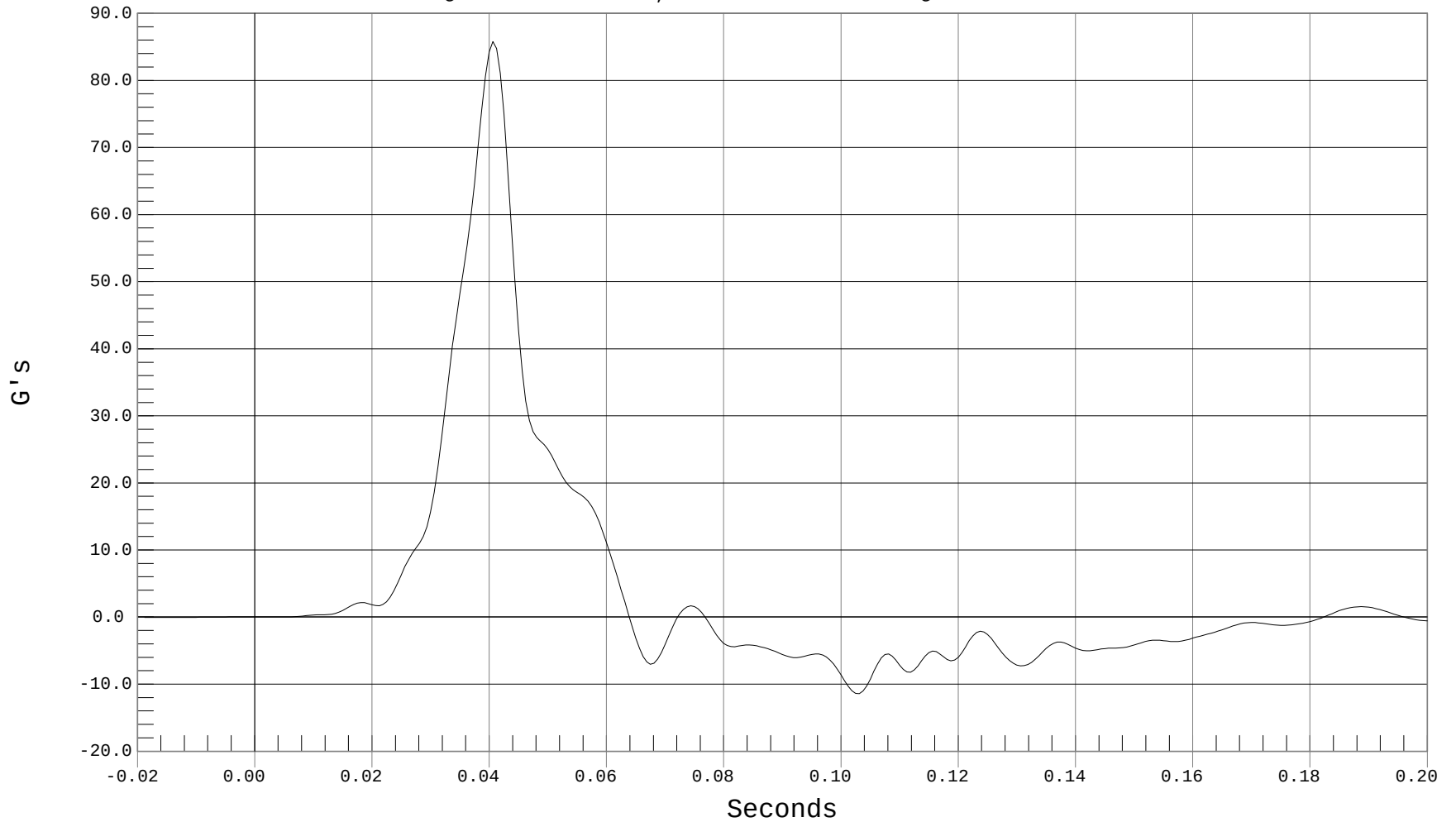
DRIVER UPPER SPINE Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 DRIVER UPPER SPINE Y, B01110FI.R21

Ymin = -11.39 G's @ 0.1030 Seconds, Ymax = 85.8 G's @ 0.0405 Seconds





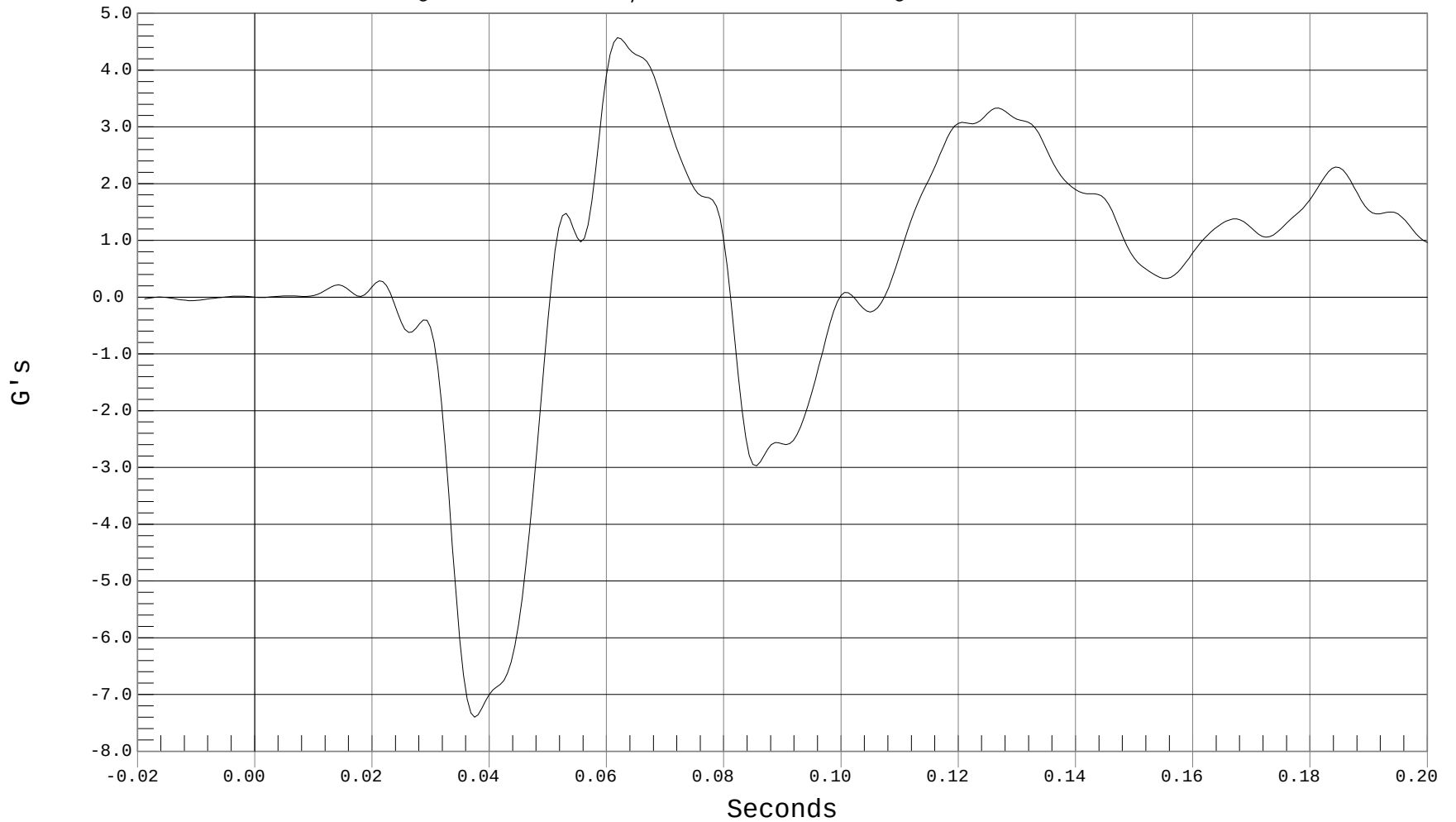
DRIVER UPPER SPINE Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 DRIVER UPPER SPINE Z, B01110FI.R22

Ymin = -7.4 G's @ 0.0374 Seconds, Ymax = 4.57 G's @ 0.0618 Seconds





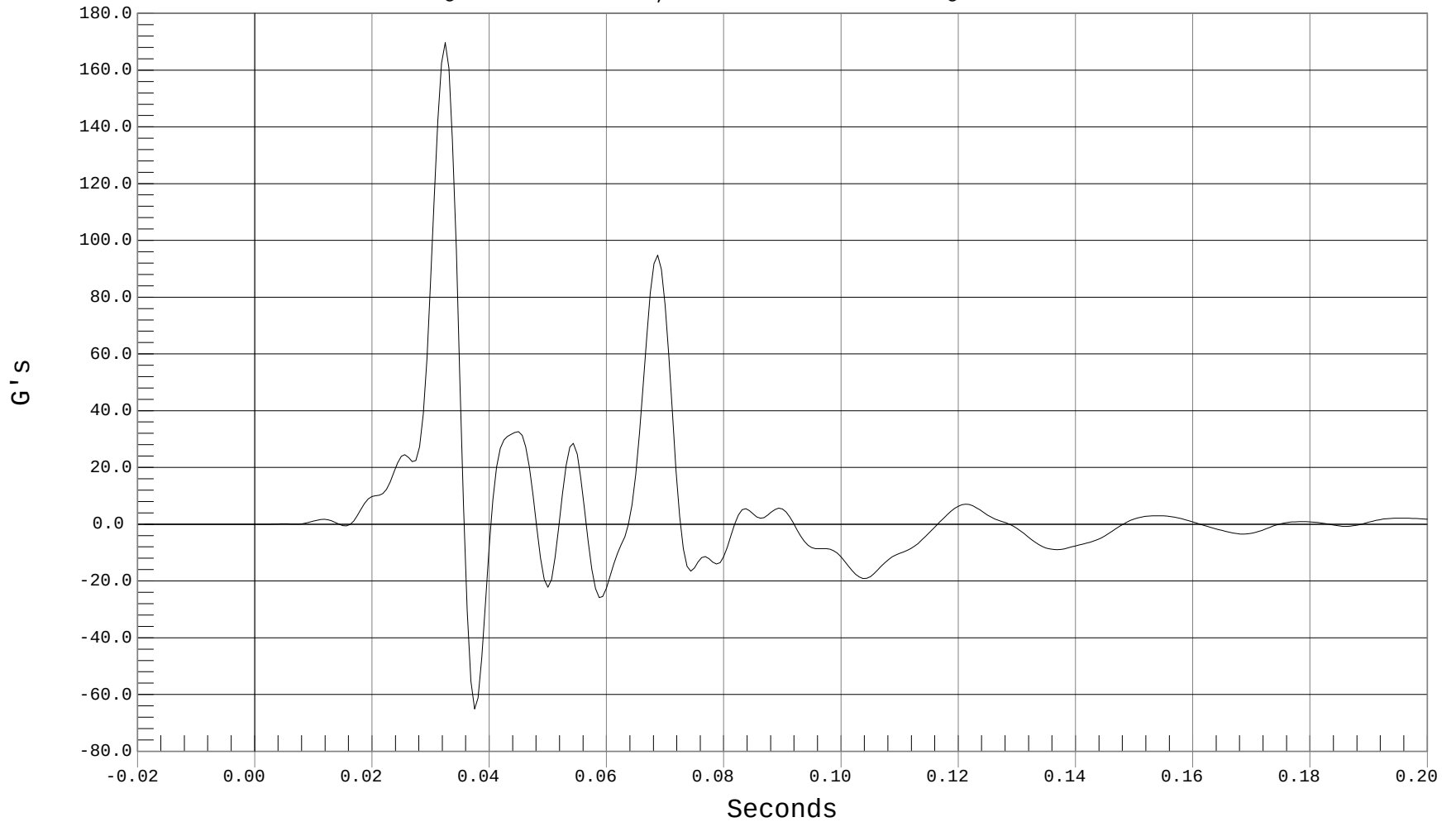
DRIVER UPPER RIB Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 DRIVER UPPER RIB Y, B01110FI.R23

Ymin = -65.15 G's @ 0.0374 Seconds, Ymax = 169.72 G's @ 0.0324 Seconds





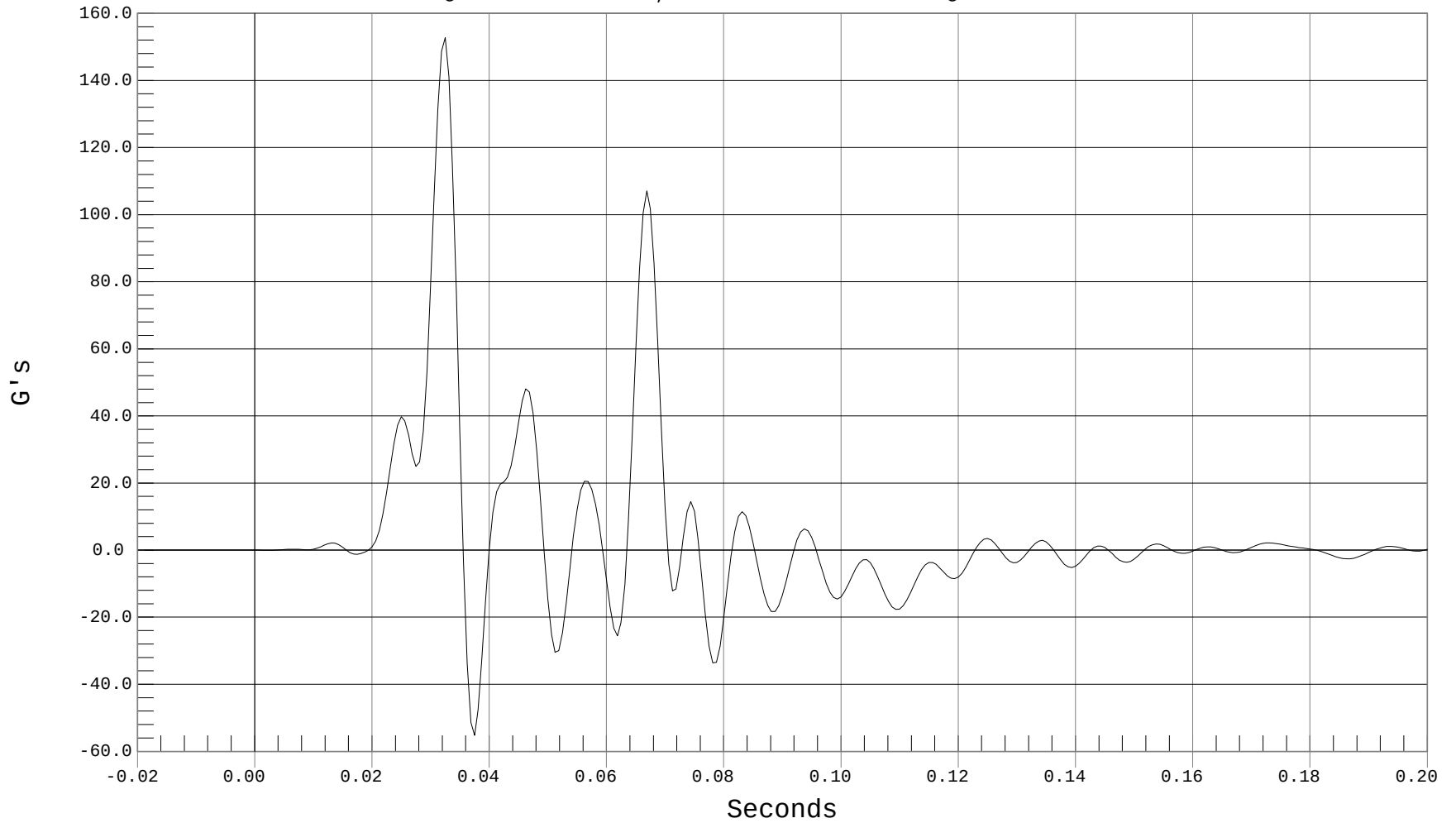
DRIVER MID RIB Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 DRIVER MID RIB Y, B01110FI.R24

Ymin = -55.19 G's @ 0.0374 Seconds, Ymax = 152.73 G's @ 0.0324 Seconds





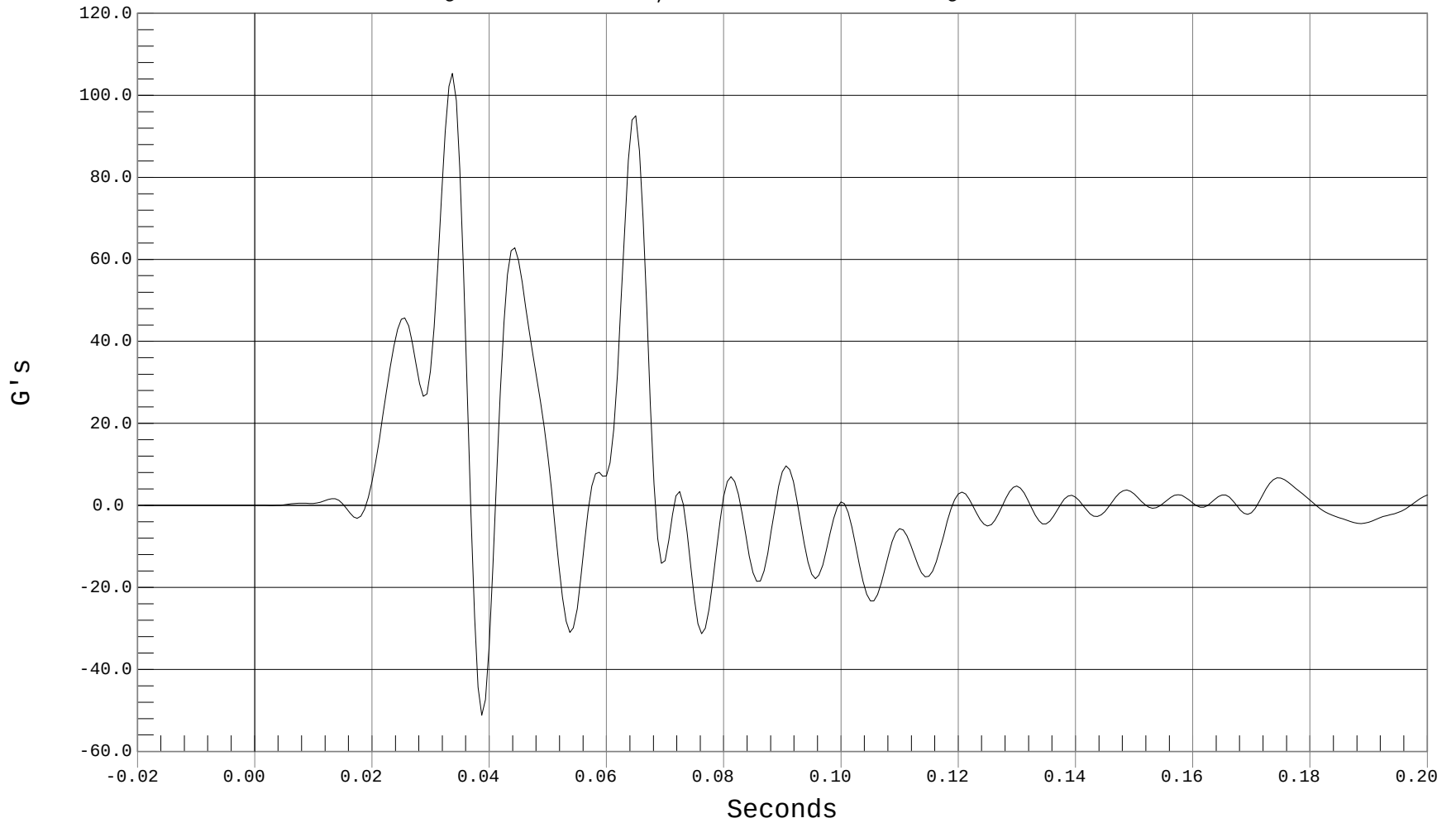
DRIVER LOWER RIB Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 DRIVER LOWER RIB Y, B01110FI.R25

Ymin = -51.21 G's @ 0.0387 Seconds, Ymax = 105.37 G's @ 0.0337 Seconds





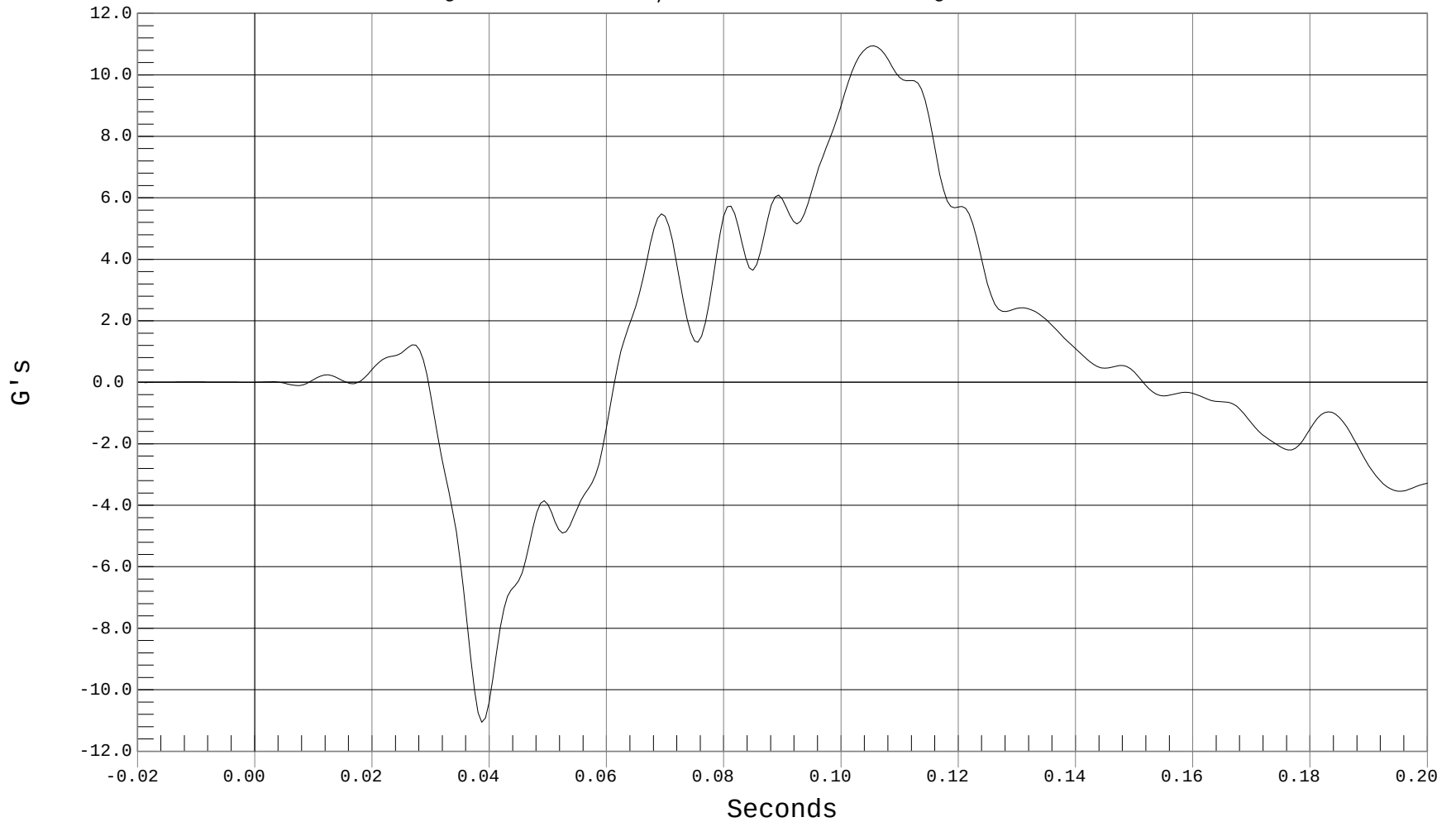
DRIVER LOWER SPINE X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 DRIVER LOWER SPINE X, B01110FI.R29

Ymin = -11.05 G's @ 0.0387 Seconds, Ymax = 10.94 G's @ 0.1055 Seconds





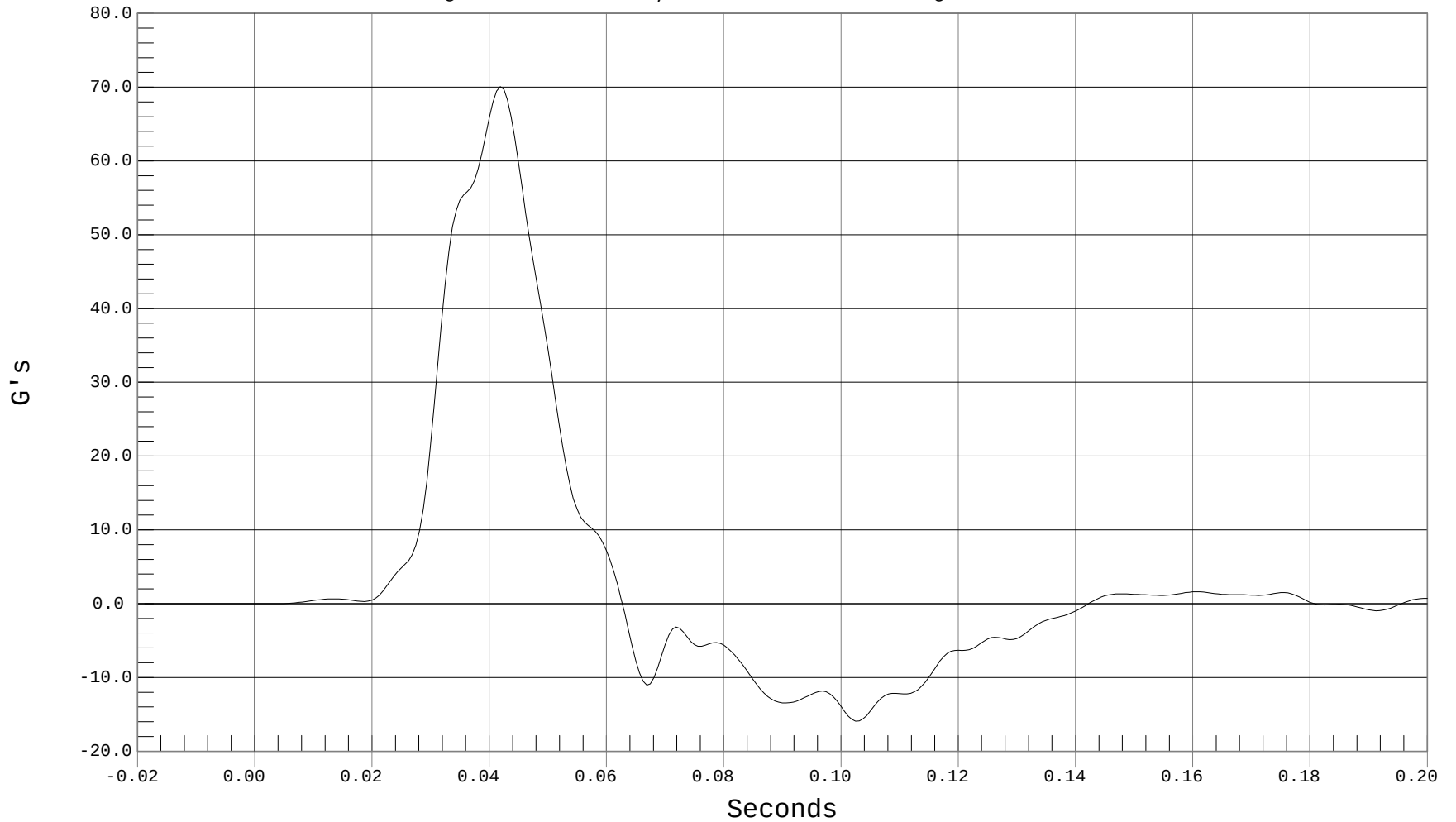
DRIVER LOWER SPINE Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 DRIVER LOWER SPINE Y, B01110FI.R30

Ymin = -15.92 G's @ 0.1024 Seconds, Ymax = 70.08 G's @ 0.0418 Seconds





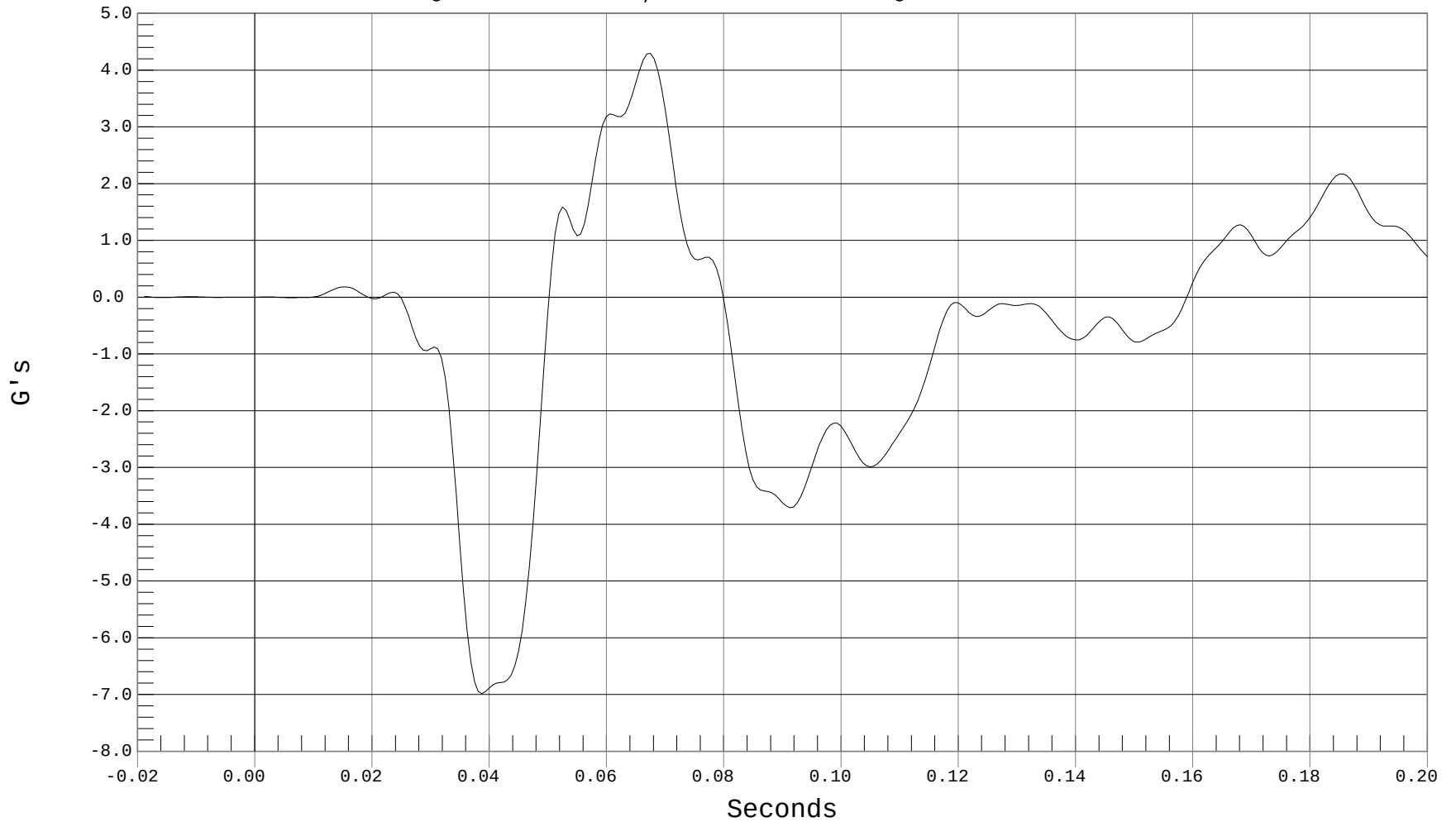
DRIVER LOWER SPINE Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 DRIVER LOWER SPINE Z, B01110FI.R31

Ymin = -6.99 G's @ 0.0387 Seconds, Ymax = 4.3 G's @ 0.0674 Seconds





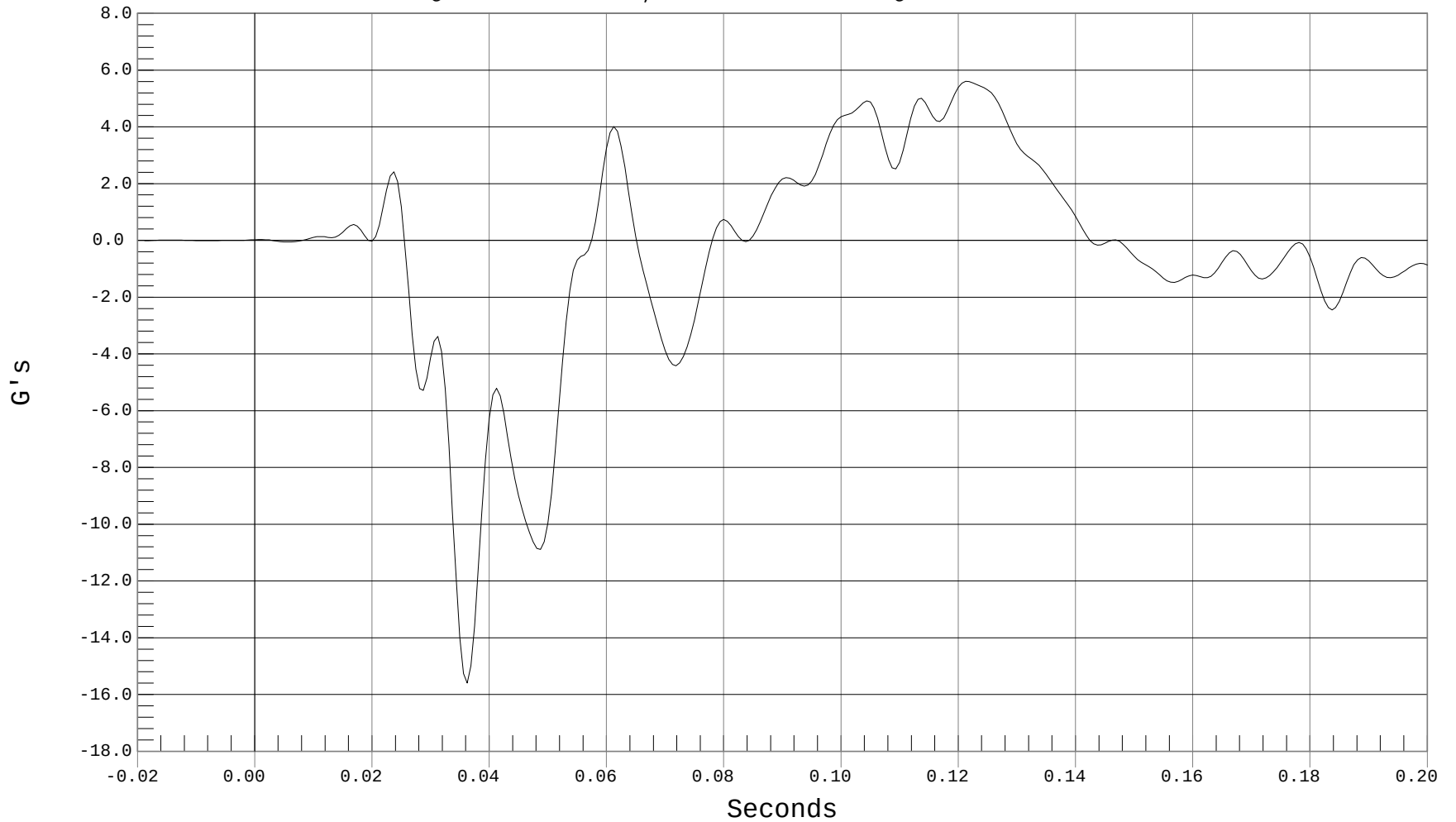
DRIVER PELVIS X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 DRIVER PELVIS X, B01110FI.R45

Ymin = -15.6 G's @ 0.0361 Seconds, Ymax = 5.6 G's @ 0.1212 Seconds





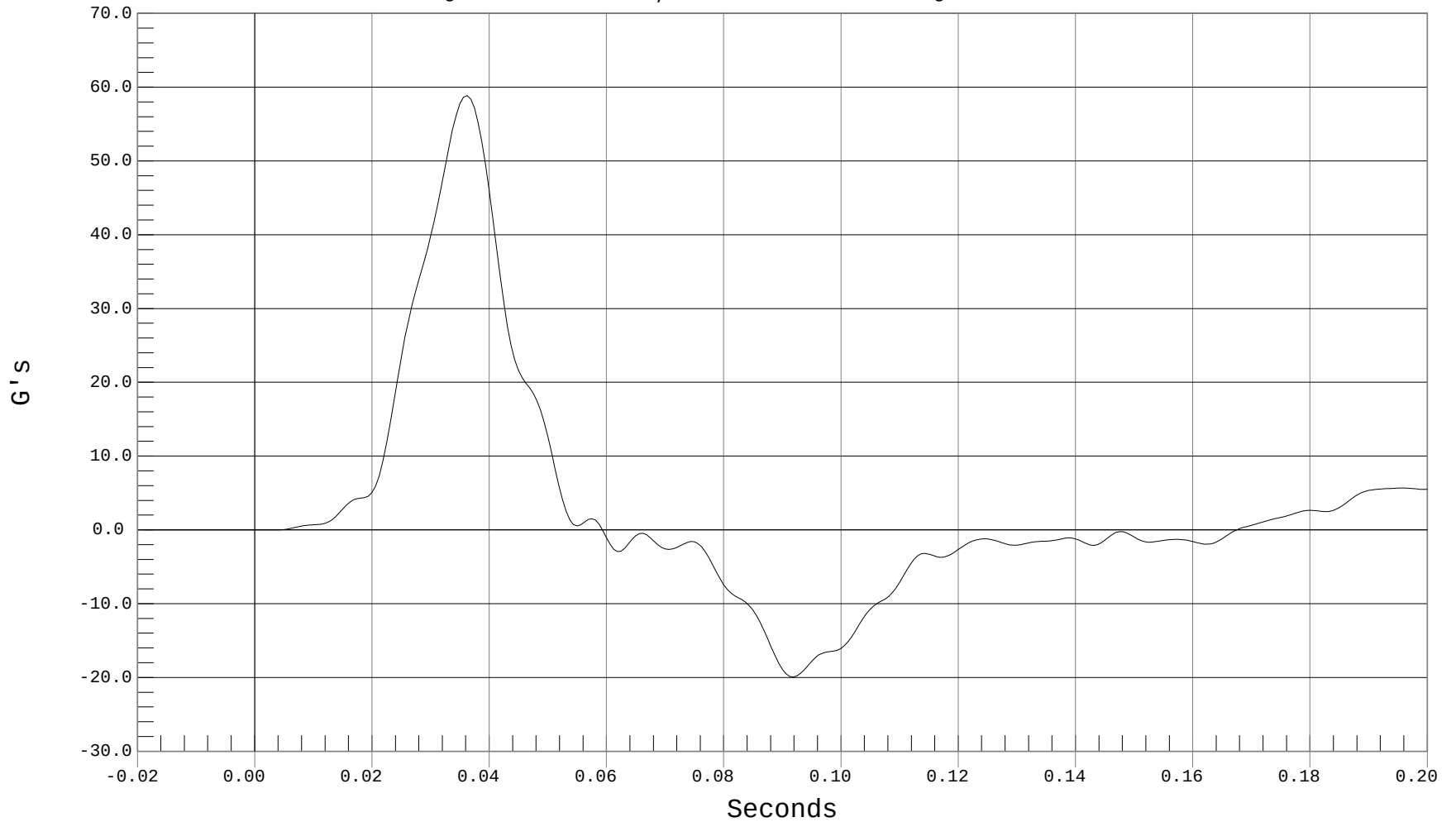
DRIVER PELVIS Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 DRIVER PELVIS Y, B01110FI.R46

Ymin = -19.95 G's @ 0.0918 Seconds, Ymax = 58.86 G's @ 0.0361 Seconds





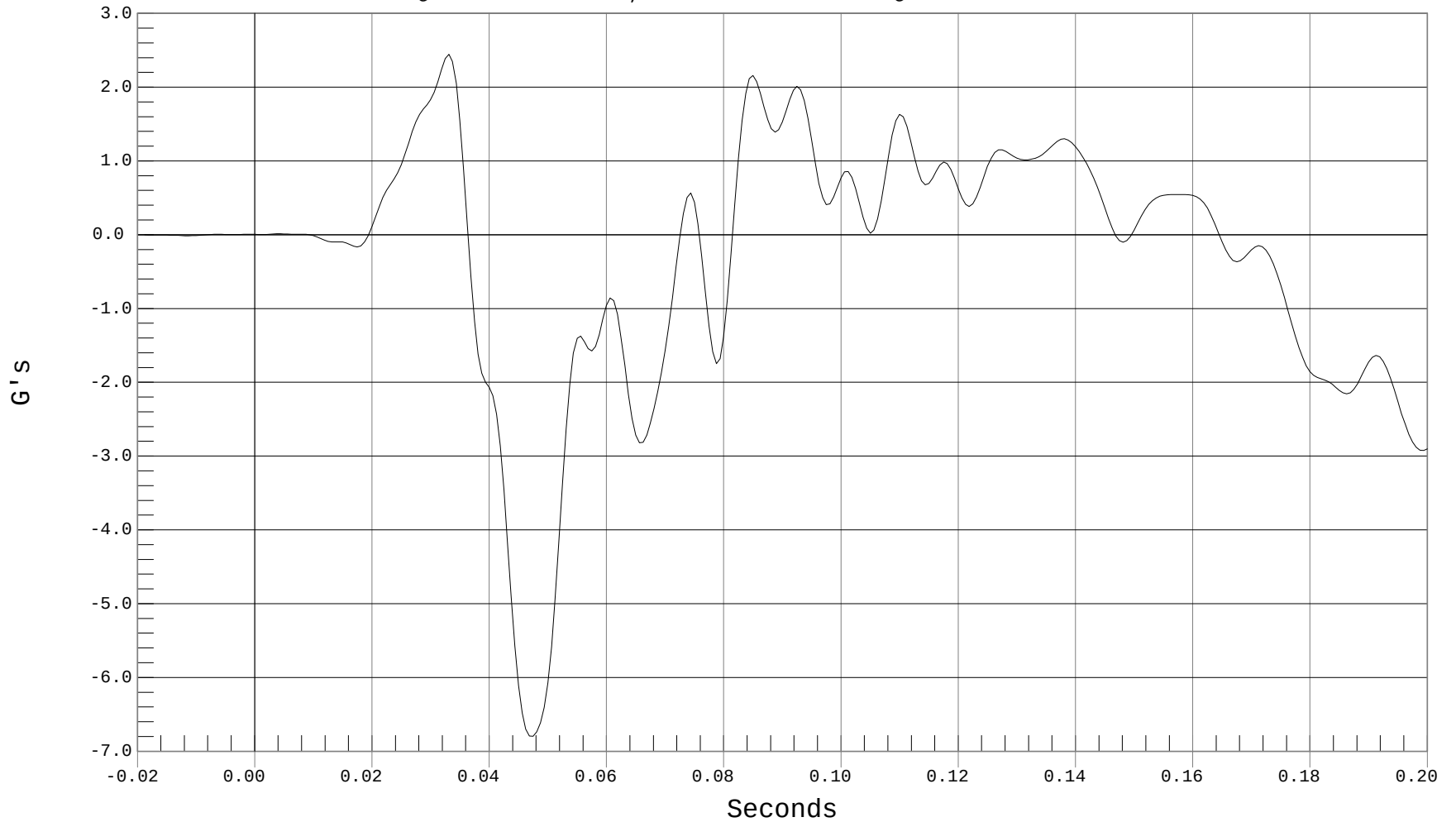
DRIVER PELVIS Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 DRIVER PELVIS Z, B01110FI.R47

Ymin = -6.8 G's @ 0.0474 Seconds, Ymax = 2.44 G's @ 0.0330 Seconds





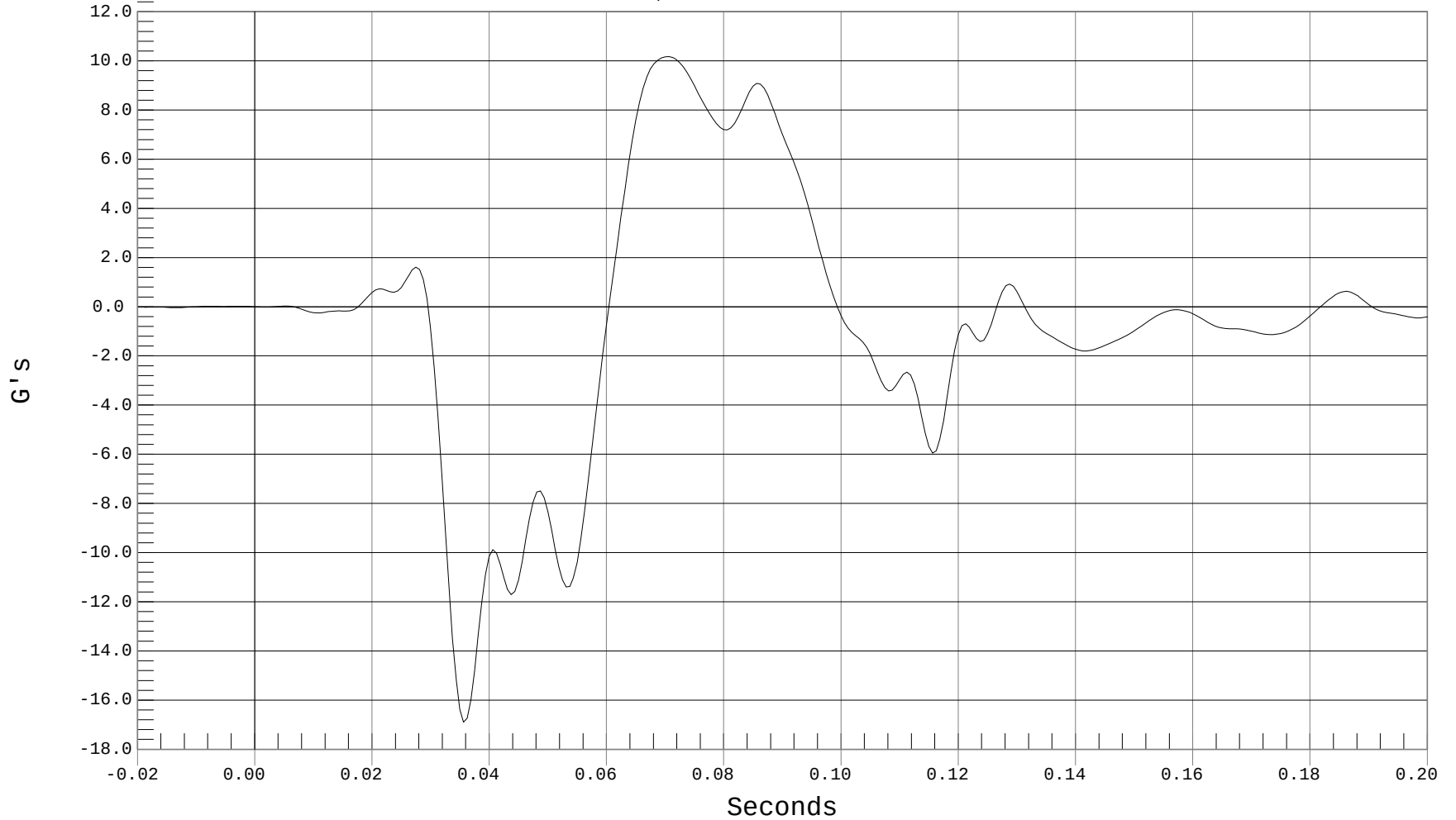
PASSENGER UPPER SPINE X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 REAR PASSENGER UPPER SPINE X, B01110FI.R80

Ymin = -16.89 G's @ 0.0355 Seconds, Ymax = 10.18 G's @ 0.0705 Seconds





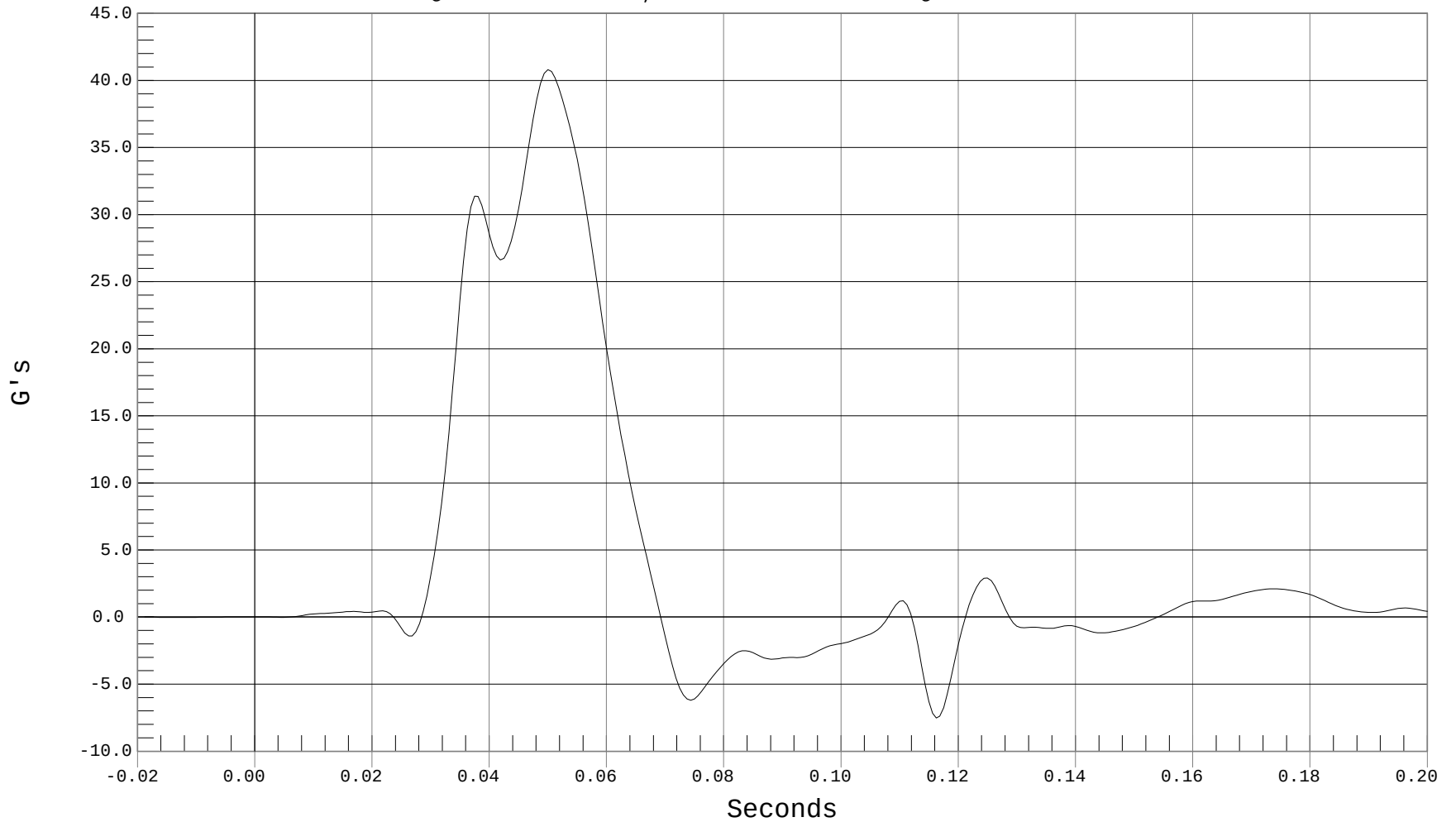
PASSENGER UPPER SPINE Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 REAR PASSENGER UPPER SPINE Y, B01110FI.R81

Ymin = -7.53 G's @ 0.1162 Seconds, Ymax = 40.81 G's @ 0.0499 Seconds





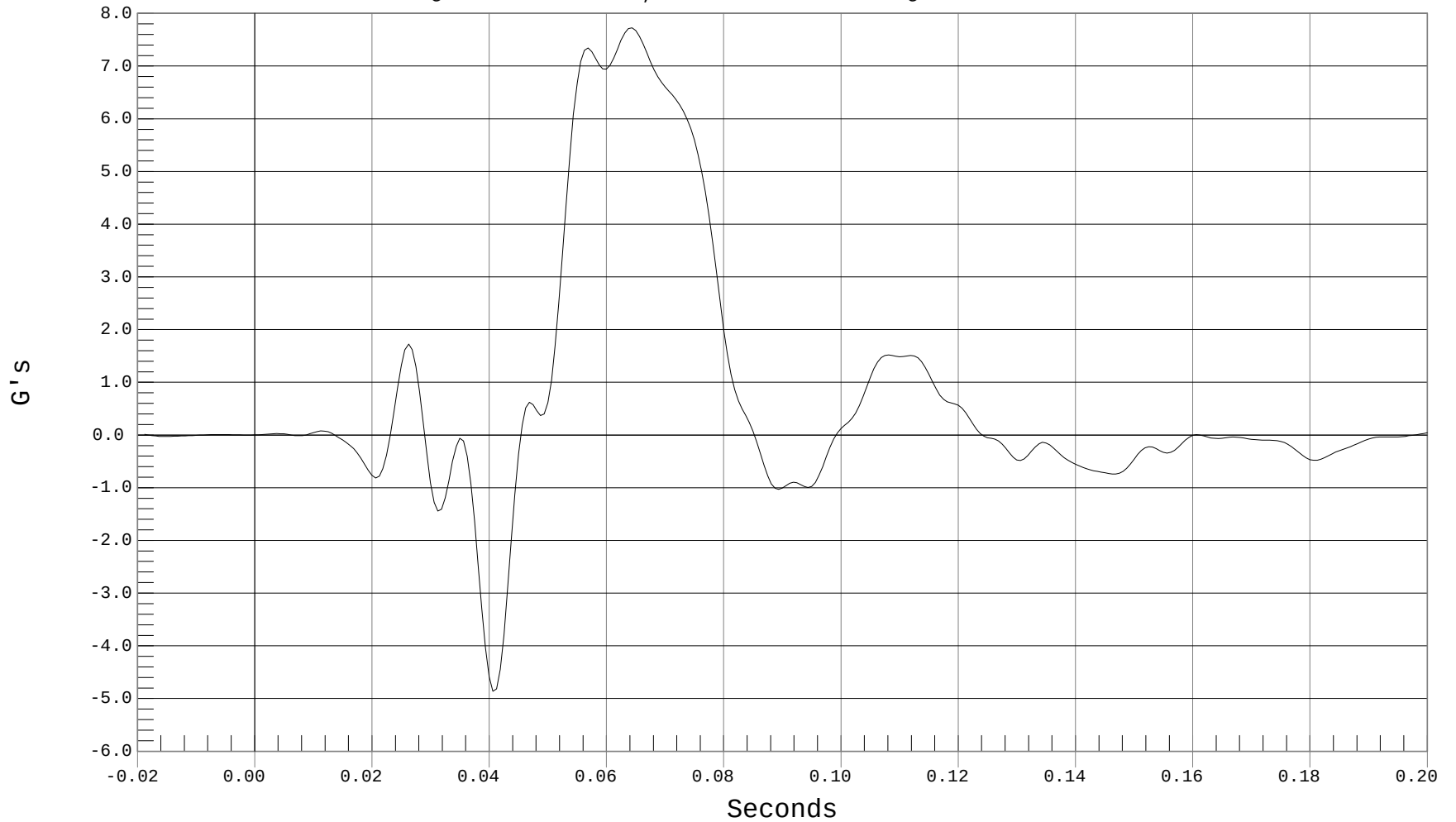
PASSENGER UPPER SPINE Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH

— 1 REAR PASSENGER UPPER SPINE Z, B01110FI.R82

Ymin = -4.86 G's @ 0.0405 Seconds, Ymax = 7.73 G's @ 0.0643 Seconds





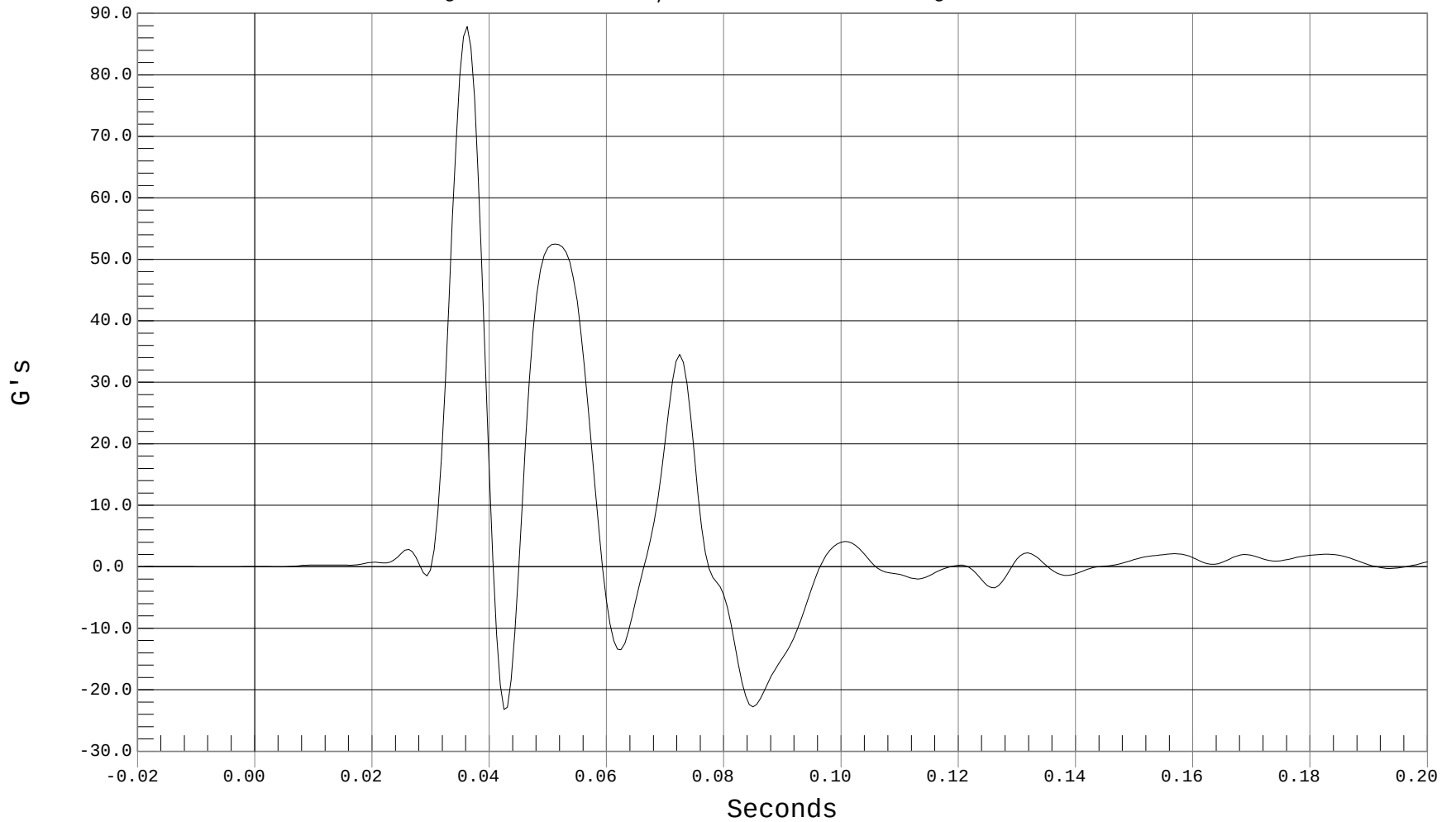
PASSENGER UPPER RIB Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 REAR PASSENGER UPPER RIB Y, B01110FI.R83

Ymin = -23.21 G's @ 0.0424 Seconds, Ymax = 87.86 G's @ 0.0361 Seconds





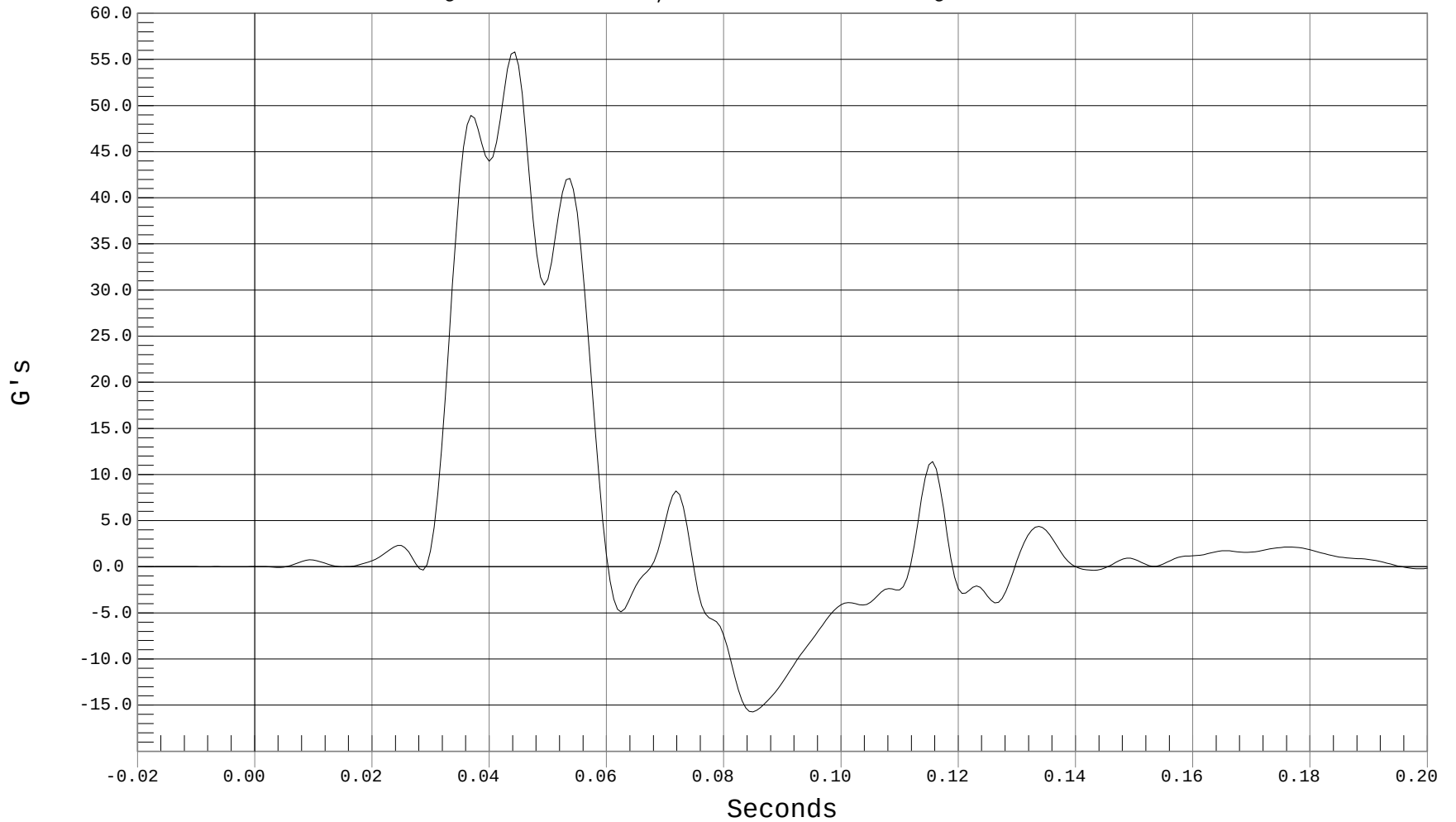
PASSENGER MID RIB Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 REAR PASSENGER MID RIB Y, B01110FI.R84

Ymin = -15.74 G's @ 0.0849 Seconds, Ymax = 55.82 G's @ 0.0443 Seconds





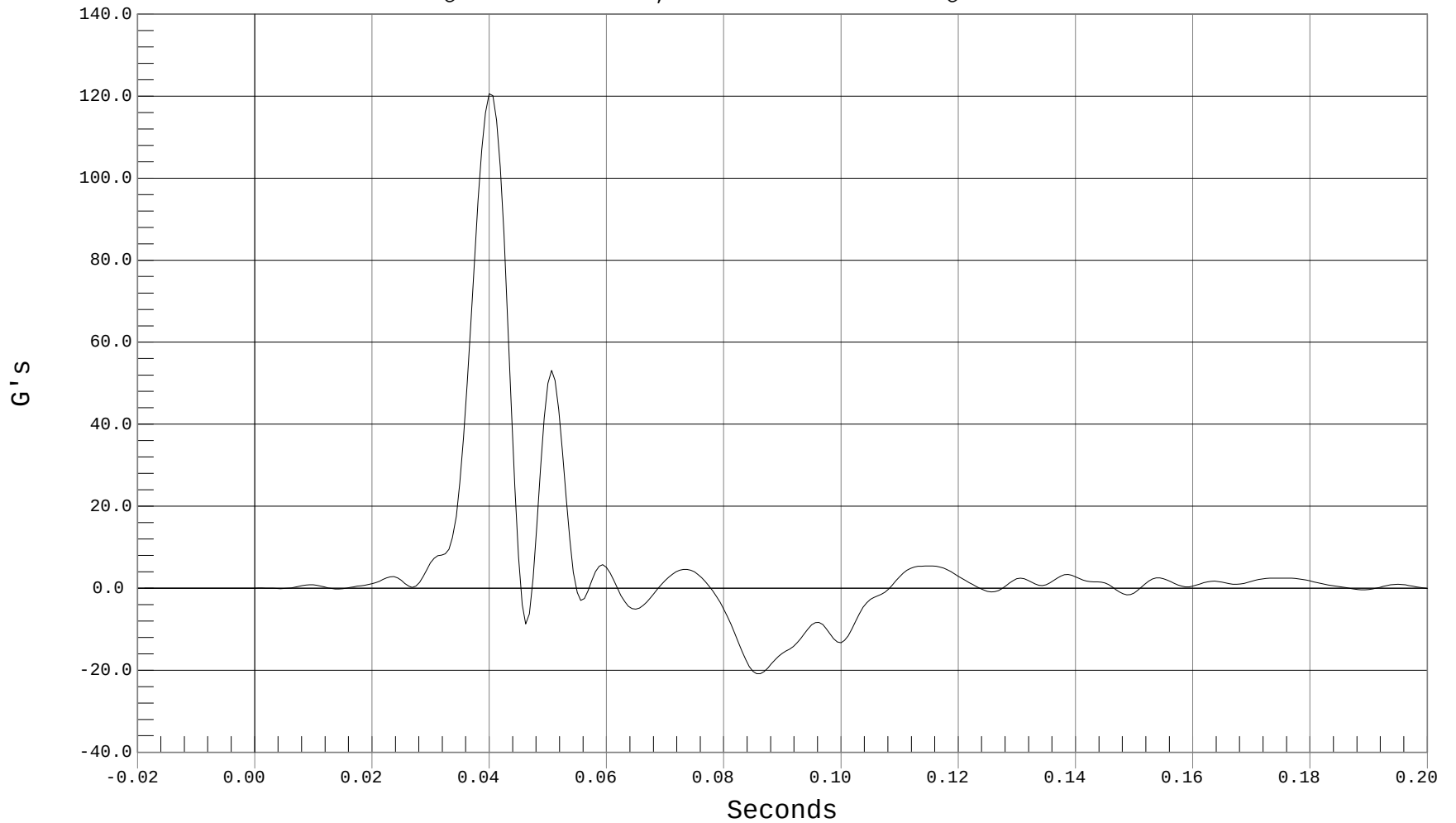
PASSENGER LOWER RIB Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 REAR PASSENGER LOWER RIB Y, B01110FI.R85

Ymin = -20.85 G's @ 0.0862 Seconds, Ymax = 120.59 G's @ 0.0399 Seconds





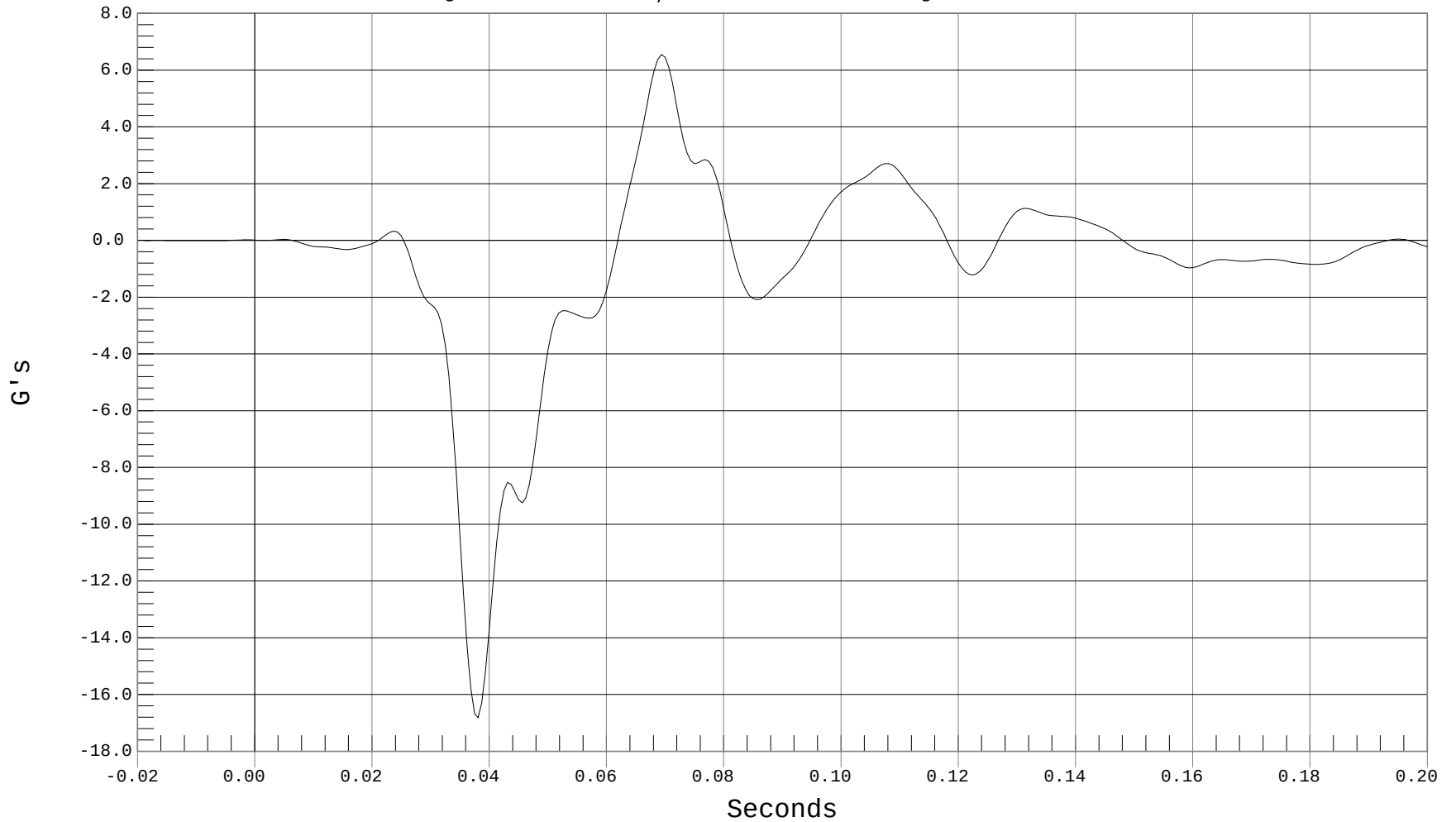
PASSENGER LOWER SPINE X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 REAR PASSENGER LOWER SPINE X, B01110FI.R89

Ymin = -16.82 G's @ 0.0380 Seconds, Ymax = 6.55 G's @ 0.0693 Seconds





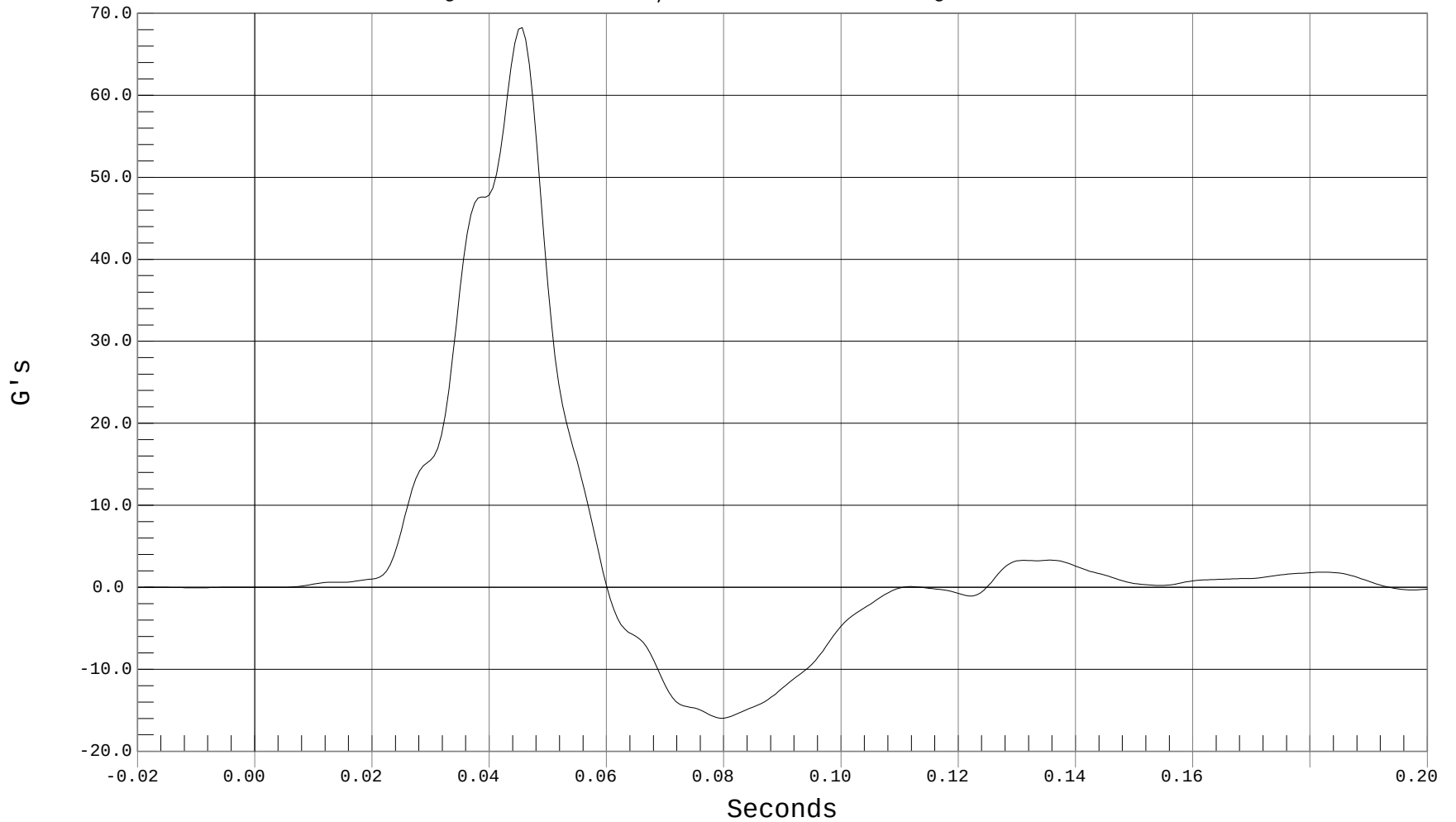
PASSENGER LOWER SPINE Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 REAR PASSENGER LOWER SPINE Y, B01110FI.R90

Ymin = -15.98 G's @ 0.0793 Seconds, Ymax = 68.28 G's @ 0.0455 Seconds





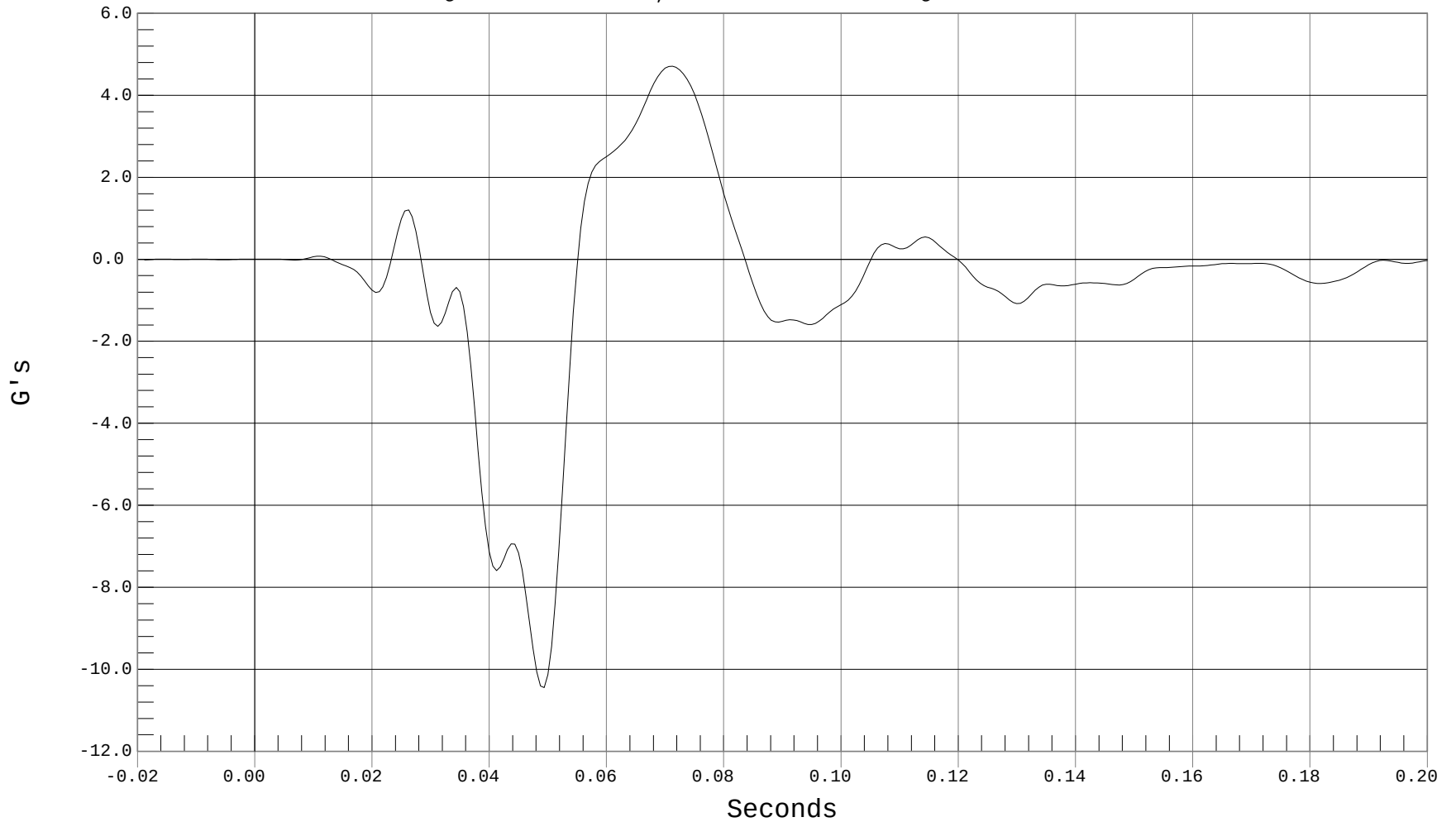
PASSENGER LOWER SPINE Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 REAR PASSENGER LOWER SPINE Z, B01110FI.R91

Ymin = -10.45 G's @ 0.0493 Seconds, Ymax = 4.71 G's @ 0.0712 Seconds





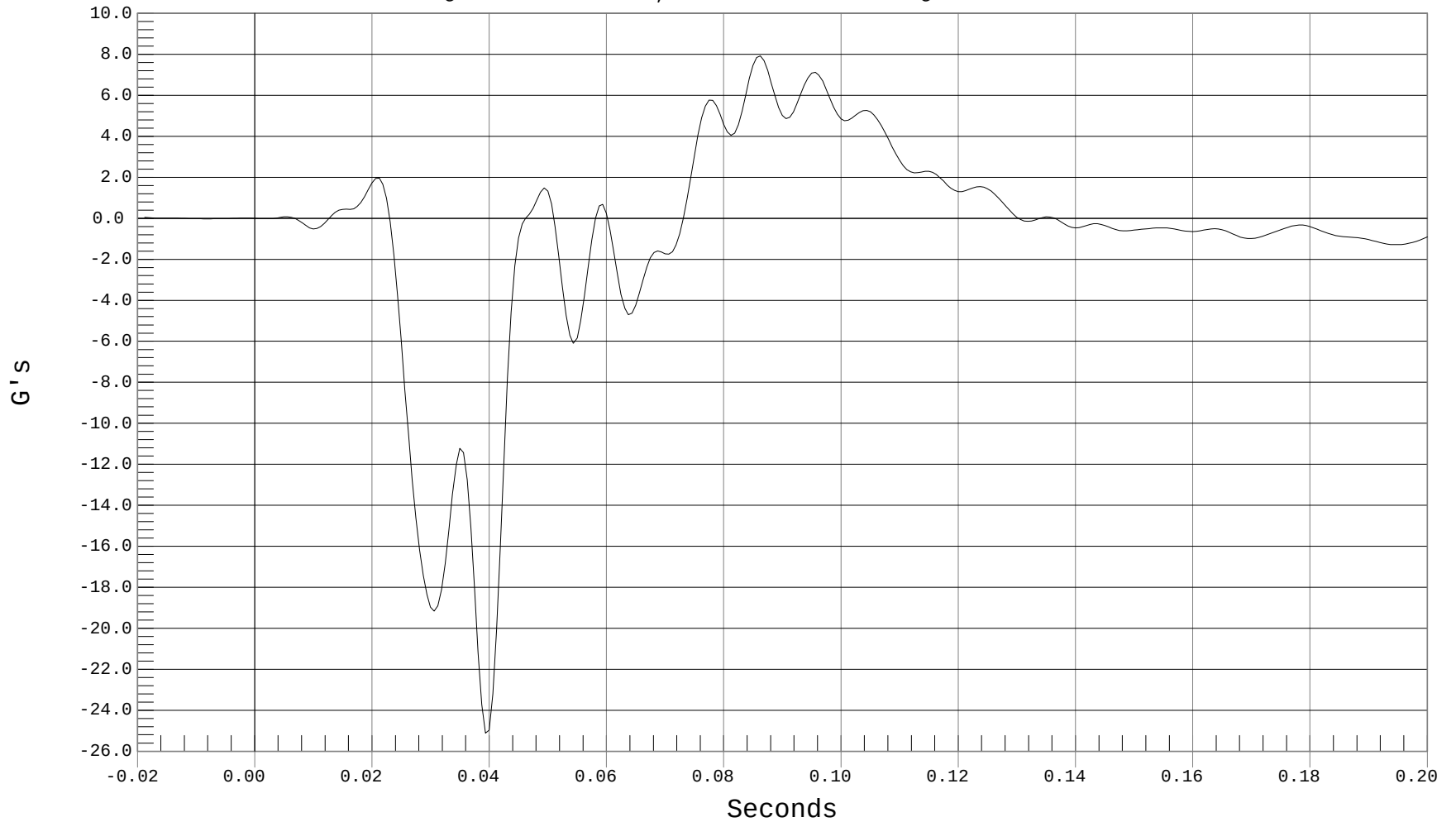
PASSENGER PELVIS X ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 REAR PASSENGER PELVIS X, B01110FI.R10

Ymin = -25.11 G's @ 0.0393 Seconds, Ymax = 7.92 G's @ 0.0862 Seconds





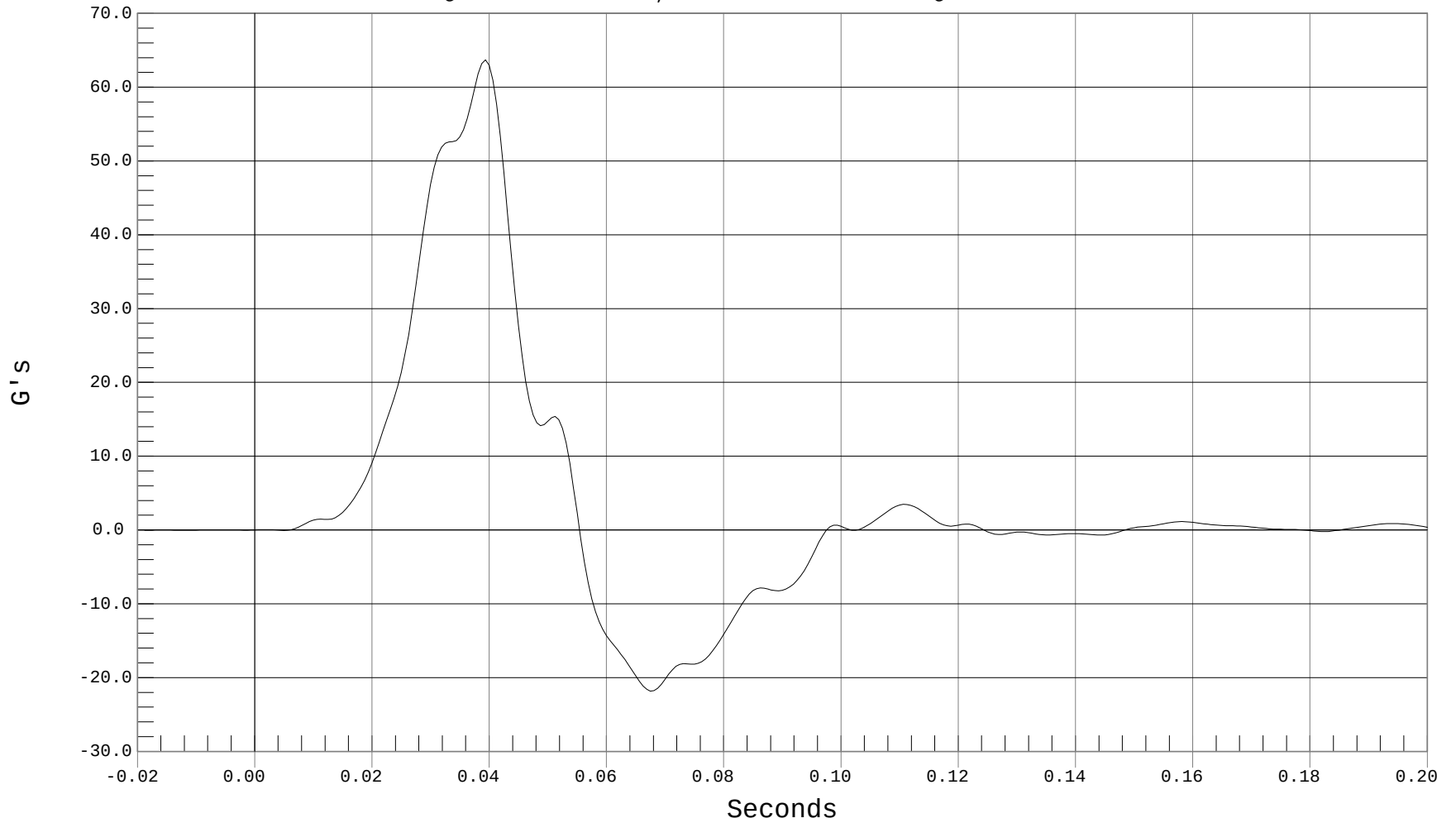
PASSENGER PELVIS Y ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 REAR PASSENGER PELVIS Y, B01110FI.R11

Ymin = -21.82 G's @ 0.0674 Seconds, Ymax = 63.69 G's @ 0.0393 Seconds





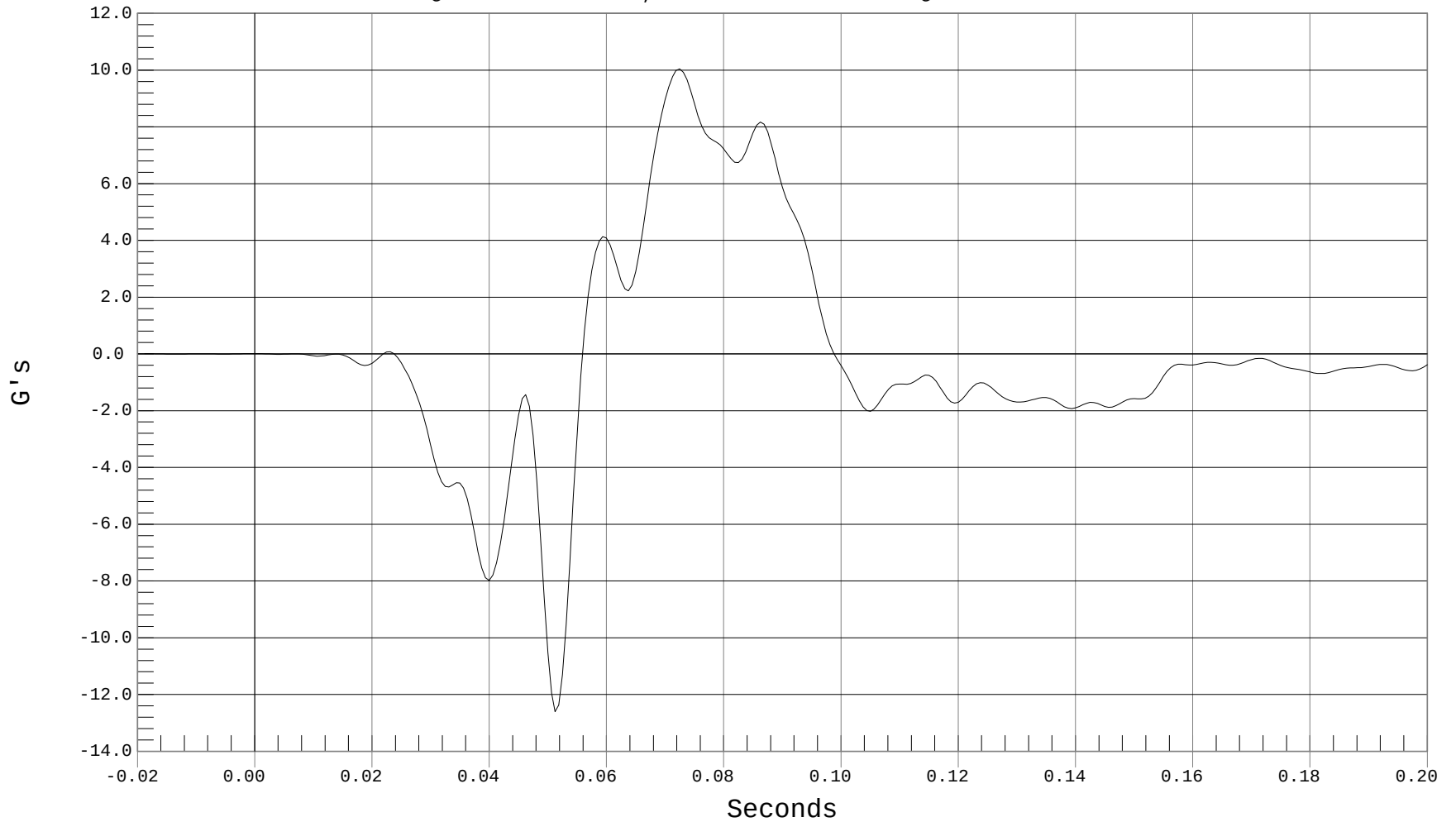
PASSENGER PELVIS Z ACCELERATION

Test Desc.: NCAP LEFT SIDE IMPACT
Component: 2001 BUICK LESABRE
Other Info:

Test Date: 10-26-01
Speed: 38.5 MPH, 62.0 KPH
Fir Filtered

— 1 REAR PASSENGER PELVIS Z, B01110FI.R12

Ymin = -12.6 G's @ 0.0512 Seconds, Ymax = 10.04 G's @ 0.0724 Seconds



APPENDIX C

ES-2 CONFIGURATION AND PERFORMANCE VERIFICATION DATA

CERTIFICATION DATA

Dummy Serial Number: 009

Calibration Test Results Summary

Dummy Serial Number: 009

Pre-Test Calibration

Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all impact test requirements.
Shoulder Impact Test:	The shoulder passed all impact test requirements.
Rib Tests:	All ribs passed all impact test requirements.
Abdomen Test:	The abdomen passed all impact test requirements.
Lumbar Spine Test:	The lumbar spine passed all impact test requirements.
Pelvis Test:	The pelvis passed all impact test requirements.

MGA RESEARCH CORPORATION
HEAD DROP TEST
EUROSID 2 DUMMY

Date: 10/24/01

Dummy Serial Number: 009

Test Number: D011551

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.2
Relative Humidity (%)	10 – 70	59
Peak Resultant Acceleration	100 – 150 g's	137
Time of Max. Res. Acceleration		24.7 msec

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



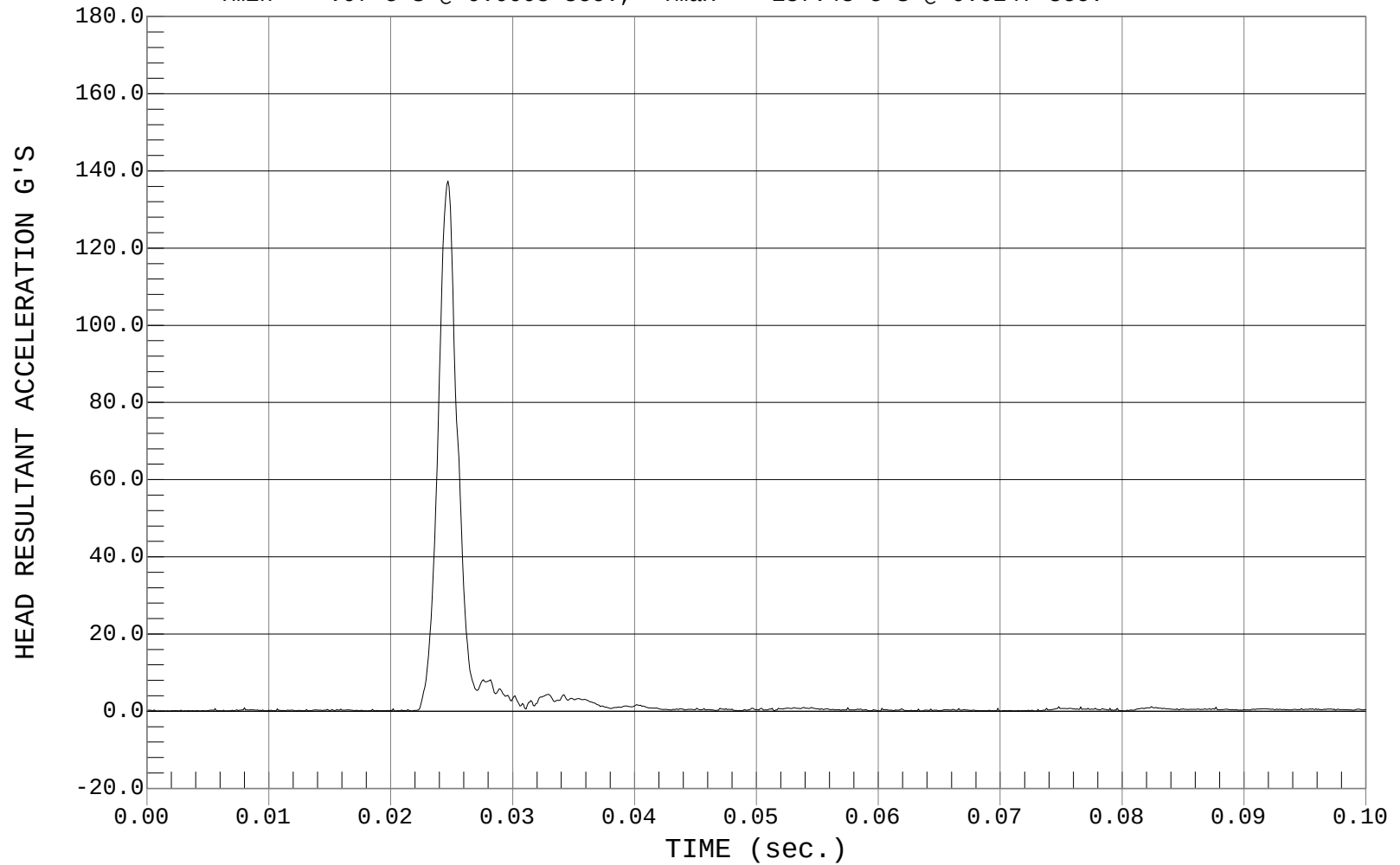
PEAK RESULTANT ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #009

Test Date: 10-24-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

— 1 HEAD RESULTANT ACCELERATION, D01551AV.A01

Ymin = .07 G'S @ 0.0008 sec., Ymax = 137.43 G'S @ 0.0247 sec.



MGA RESEARCH CORPORATION
NECK PENDULUM TEST
EUROSID 2 DUMMY

Date: 10/24/01

Dummy Serial Number: 009

Test Number: D011552

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.0 – 22.0	21.1
Relative Humidity (%)		10 – 70	58
Pendulum Speed		3.3 - 3.5	3.4
Pendulum Deceleration	3 msec	1.25 - 1.53 m/sec	-.35
	8 msec	1.59 - 2.04 m/sec	-1.67
	14 msec	3.20 - 3.85 m/sec	-3.30
Maximum Flexion Angle		49.0 – 59.0 deg	56.4
Time of Max. Flexion Angle		54.0 – 66.0 ms	59.6
Maximum Angle Theta (A)		32.0 – 37.0 deg	34.8
Time of Max. Theta (A)		53.0 – 63.0 ms	57.8
Maximum Angle Theta (B)		29.94 – 32.44 deg	30.93
Time of Max. Theta (B)		54.0 – 64.0 ms	57.1

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

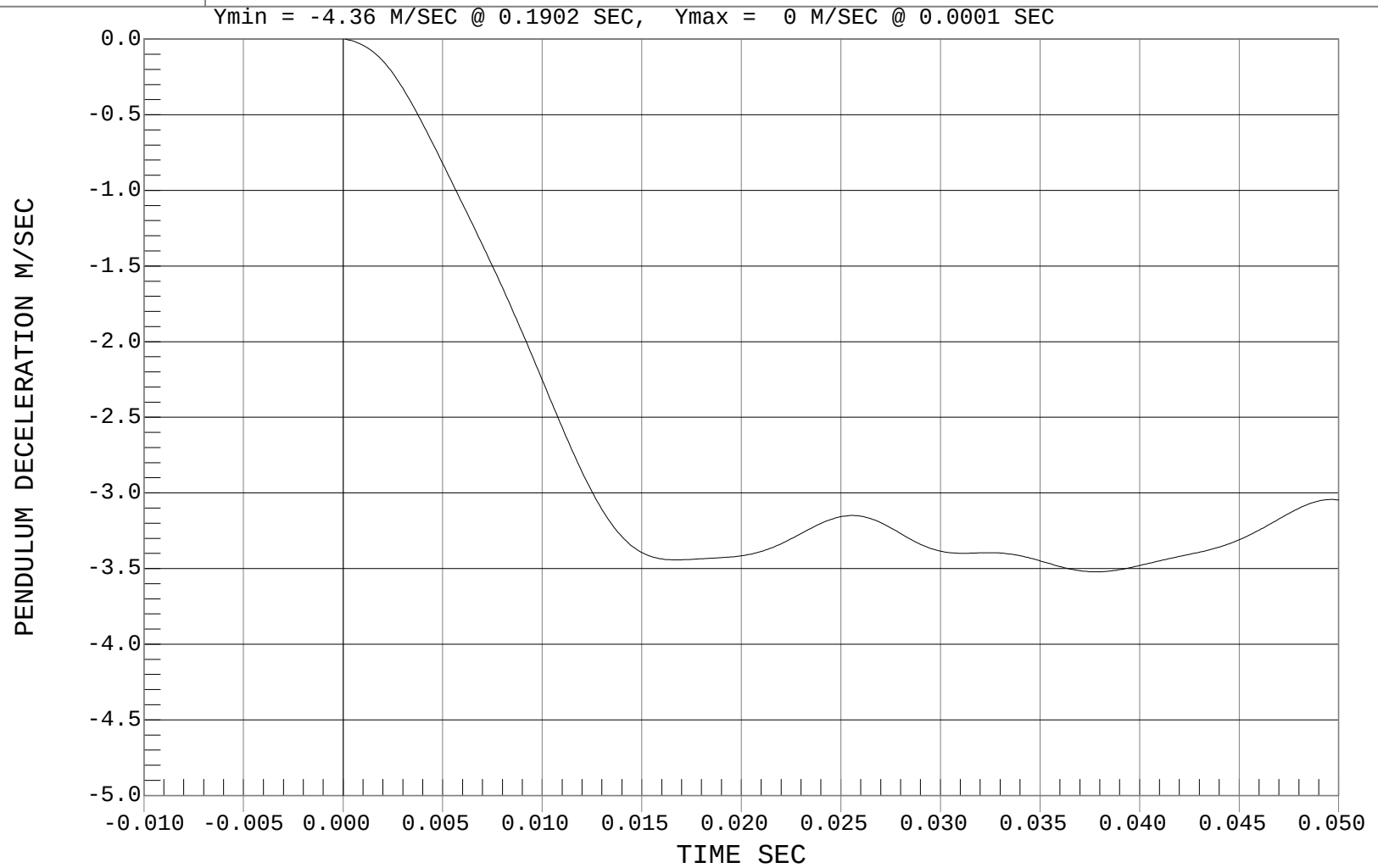


PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #009

Test Date: 10-24-01
Speed: 11.00 FT/SEC, 3.35 M/SEC

— 1 PENDULUM DECELERATION, D01552AI.V04





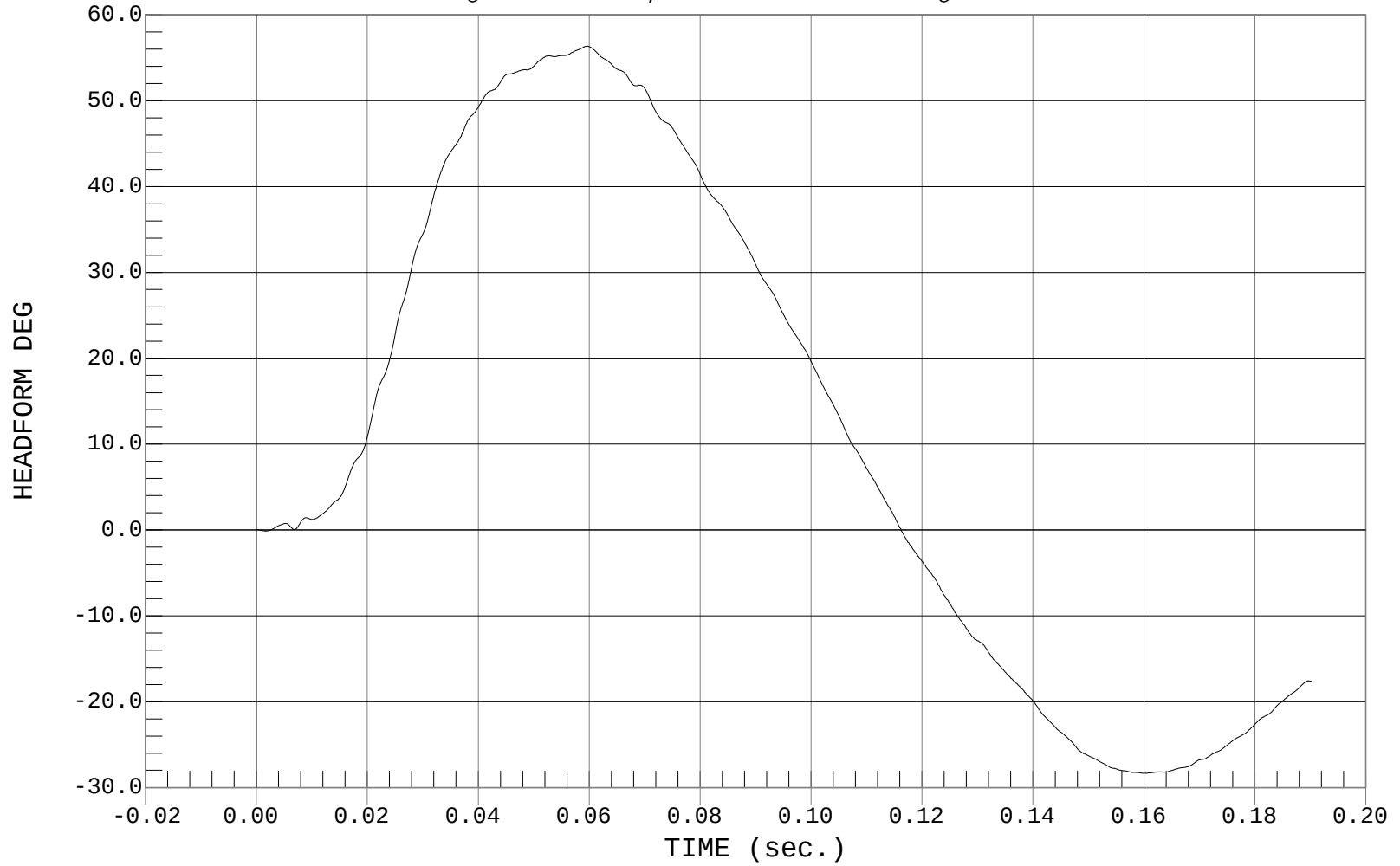
FLEXION ANGLE

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #009

Test Date: 10-24-01
Speed: 11.00 FT/SEC, 3.35 M/SEC

— 1 HEADFORM, D01552DT.D08

Ymin = -28.35 DEG @ 0.1600 sec., Ymax = 56.35 DEG @ 0.0596 sec.





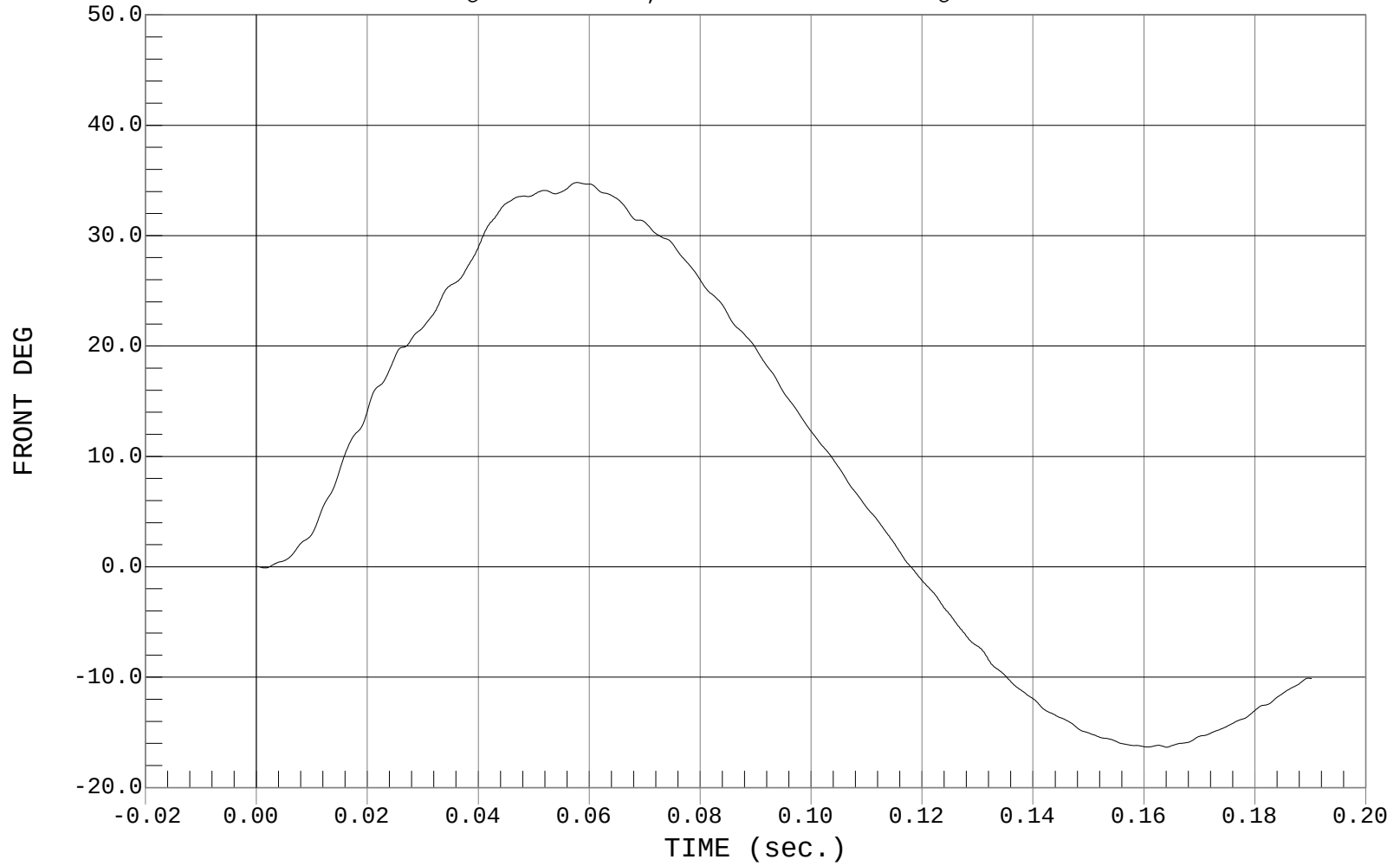
THETA A

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #009

Test Date: 10-24-01
Speed: 11.00 FT/SEC, 3.35 M/SEC

— 1 FRONT, D01552DT.D05

Ymin = -16.35 DEG @ 0.1641 sec., Ymax = 34.81 DEG @ 0.0578 sec.





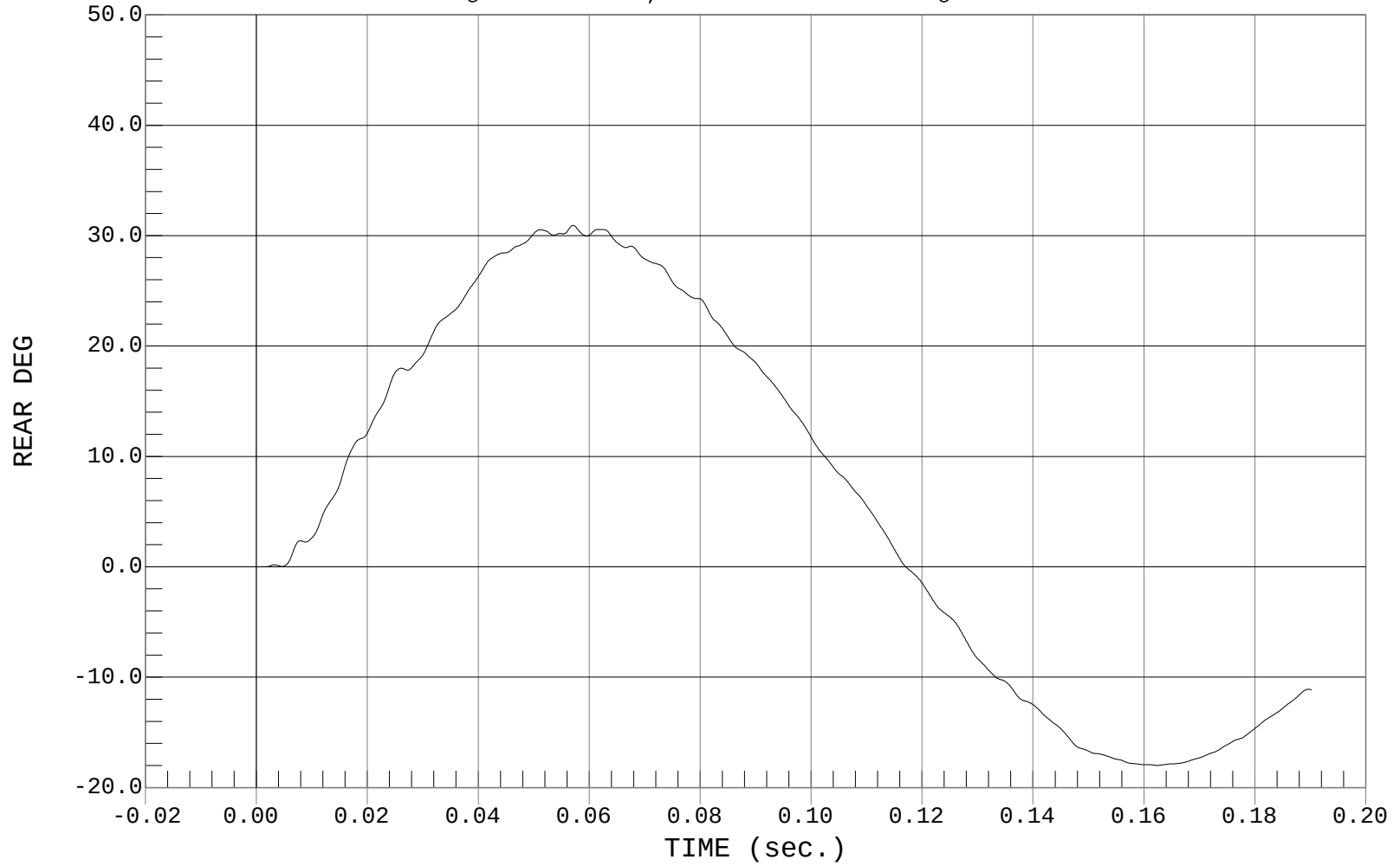
THETA B

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #009

Test Date: 10-24-01
Speed: 11.00 FT/SEC, 3.35 M/SEC

— 1 REAR, D01552DT.D06

Ymin = -17.99 DEG @ 0.1624 sec., Ymax = 30.93 DEG @ 0.0571 sec.



MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
EUROSID 2 DUMMY

Date: 10/25/01

Dummy Serial Number: 009

Test Number: D011553

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.0
Relative Humidity (%)	10 – 70	27
Pendulum Speed	4.2 – 4.4 m/s	4.3
Max. Resultant Acceleration	7.5 – 10.5 g's	10.2
Time of Max. Pendulum Acceleration		27.9 msec

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



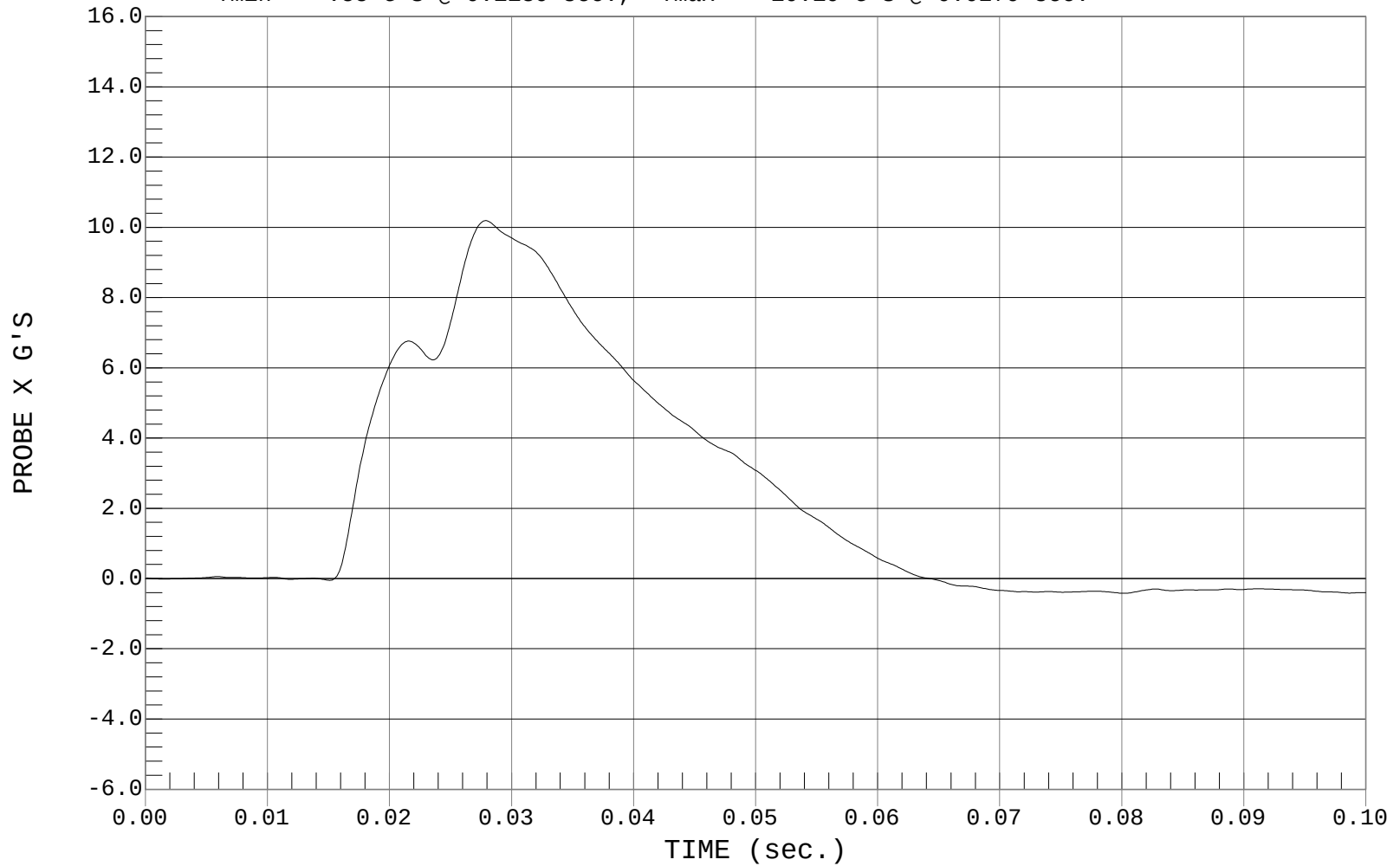
SHOULDER ACCELERATION

Test Desc.: Dummy Calibration - Shoulder Impact
Component: Dummy #009

Test Date: 10-25-01
Speed: 14.01 FT/SEC, 4.27 M/SEC

1 PROBE X, D01553AF.A01

Ymin = -.55 G'S @ 0.1139 sec., Ymax = 10.19 G'S @ 0.0279 sec.



MGA RESEARCH CORPORATION
UPPER/MIDDLE/LOWER RIB TESTS
SIDE IMPACT DUMMY (SID)

Date: 10/23/01
Dummy Serial Number: 009
Test Number: D011554/5/6

UPPER RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.6
Relative Humidity (%)	10 – 70	45
Displacement at 2 m/s	23.5 – 27.5 mm	25.4
Displacement at 3 m/s	36.0 – 40.0 mm	39.3
Displacement at 4 m/s	46.0 – 51.0 mm	49.5

MIDDLE RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.6
Relative Humidity (%)	10 – 70	45
Displacement at 2 m/s	23.5 – 27.5 mm	26.1
Displacement at 3 m/s	36.0 – 40.0 mm	39.7
Displacement at 4 m/s	46.0 – 51.0 mm	50.0

LOWER RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.6
Relative Humidity (%)	10 – 70	45
Displacement at 2 m/s	23.5 – 27.5 mm	24.6
Displacement at 3 m/s	36.0 – 40.0 mm	38.8
Displacement at 4 m/s	46.0 – 51.0 mm	48.7

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



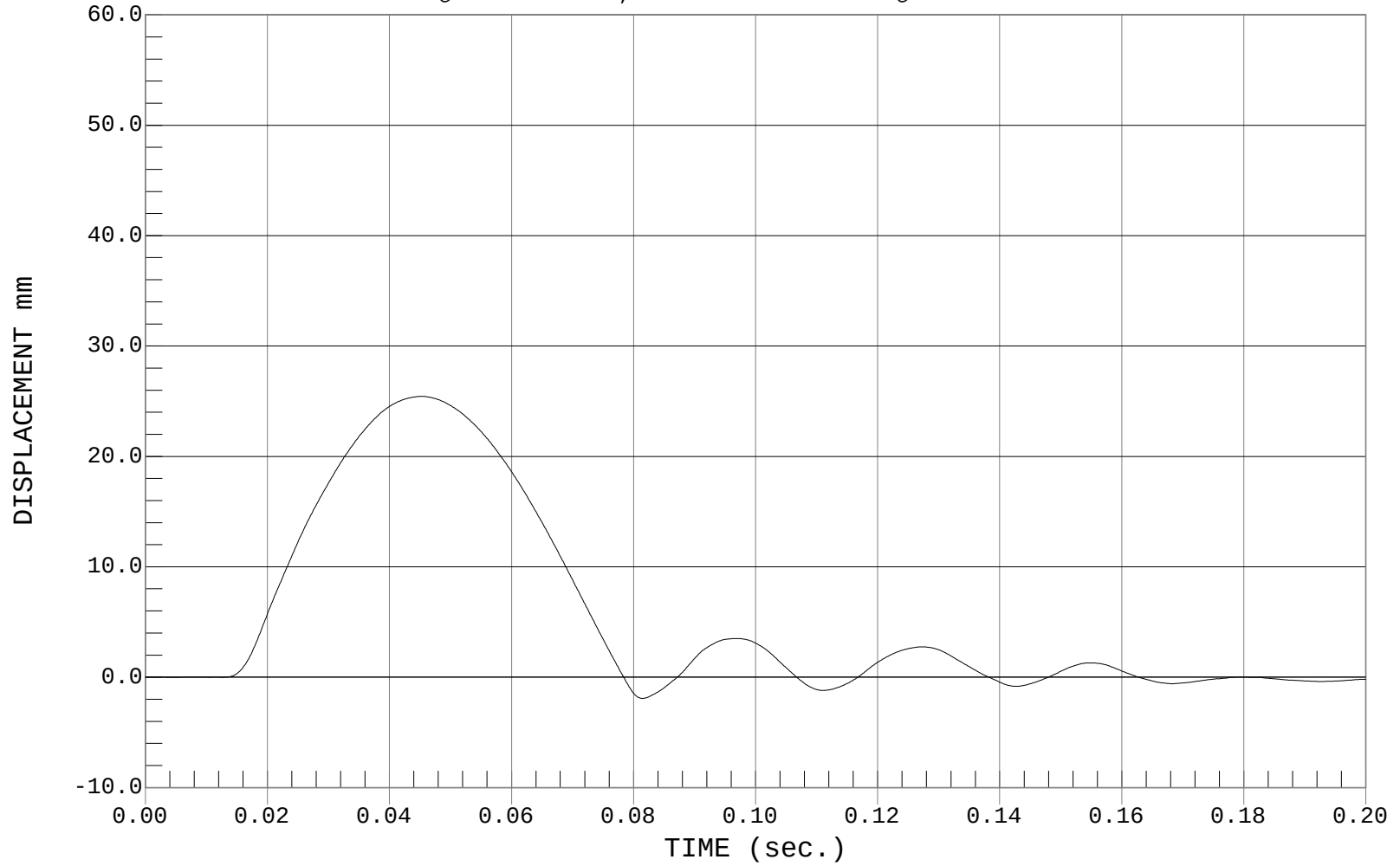
UPPER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - RIB MODULE
Component: Dummy #009

Test Date: 10-23-01
Speed: 6.56 FT/SEC, 2.00 M/SEC

— 1 DISPLACEMENT, D01554DF.D05

Ymin = -1.92 mm @ 0.0815 sec., Ymax = 25.44 mm @ 0.0453 sec.





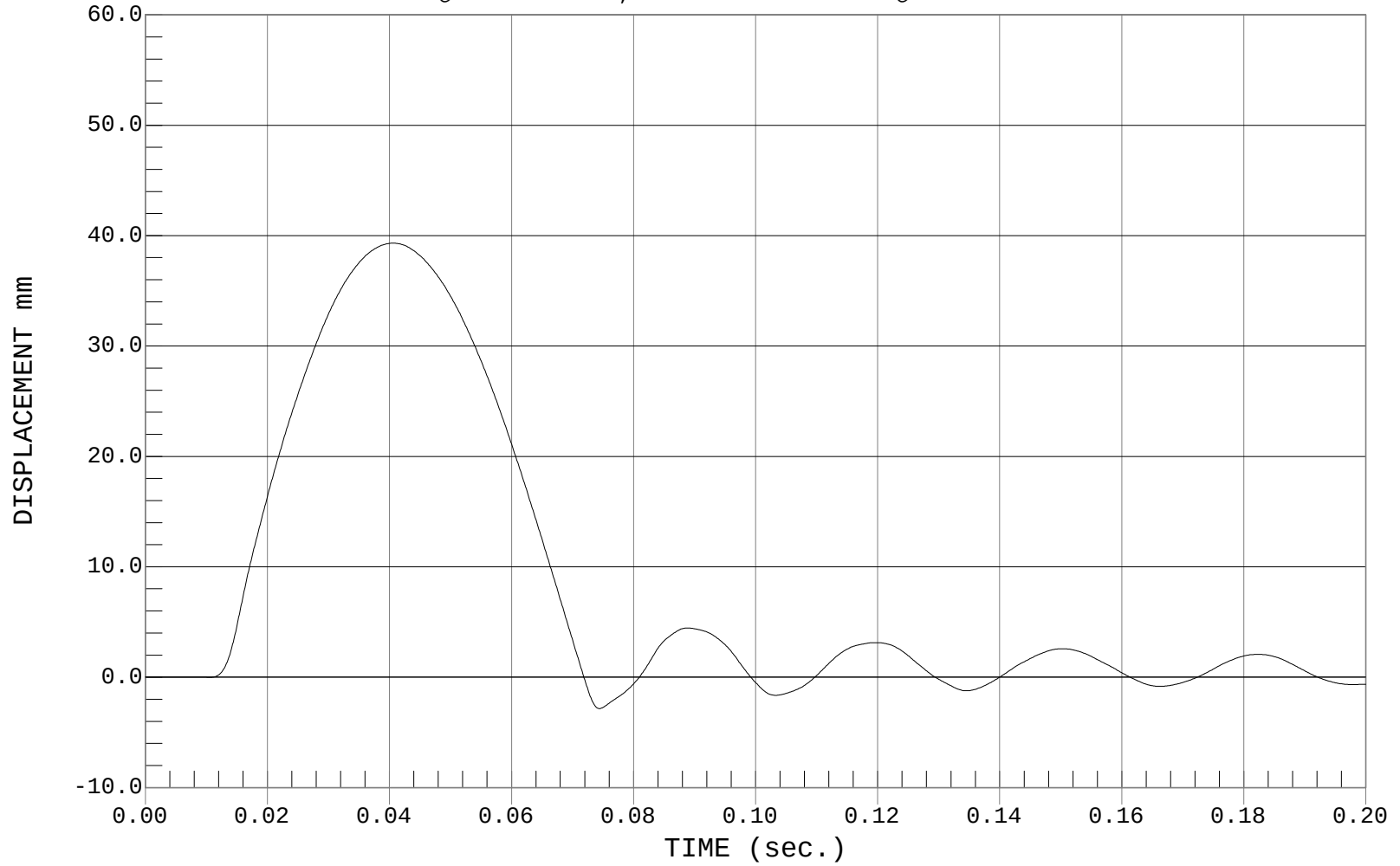
UPPER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - RIB MODULE
Component: Dummy #009

Test Date: 10-23-01
Speed: 9.84 FT/SEC, 3.00 M/SEC

— 1 DISPLACEMENT, D01554DF.D06

Ymin = -2.84 mm @ 0.0744 sec., Ymax = 39.32 mm @ 0.0406 sec.





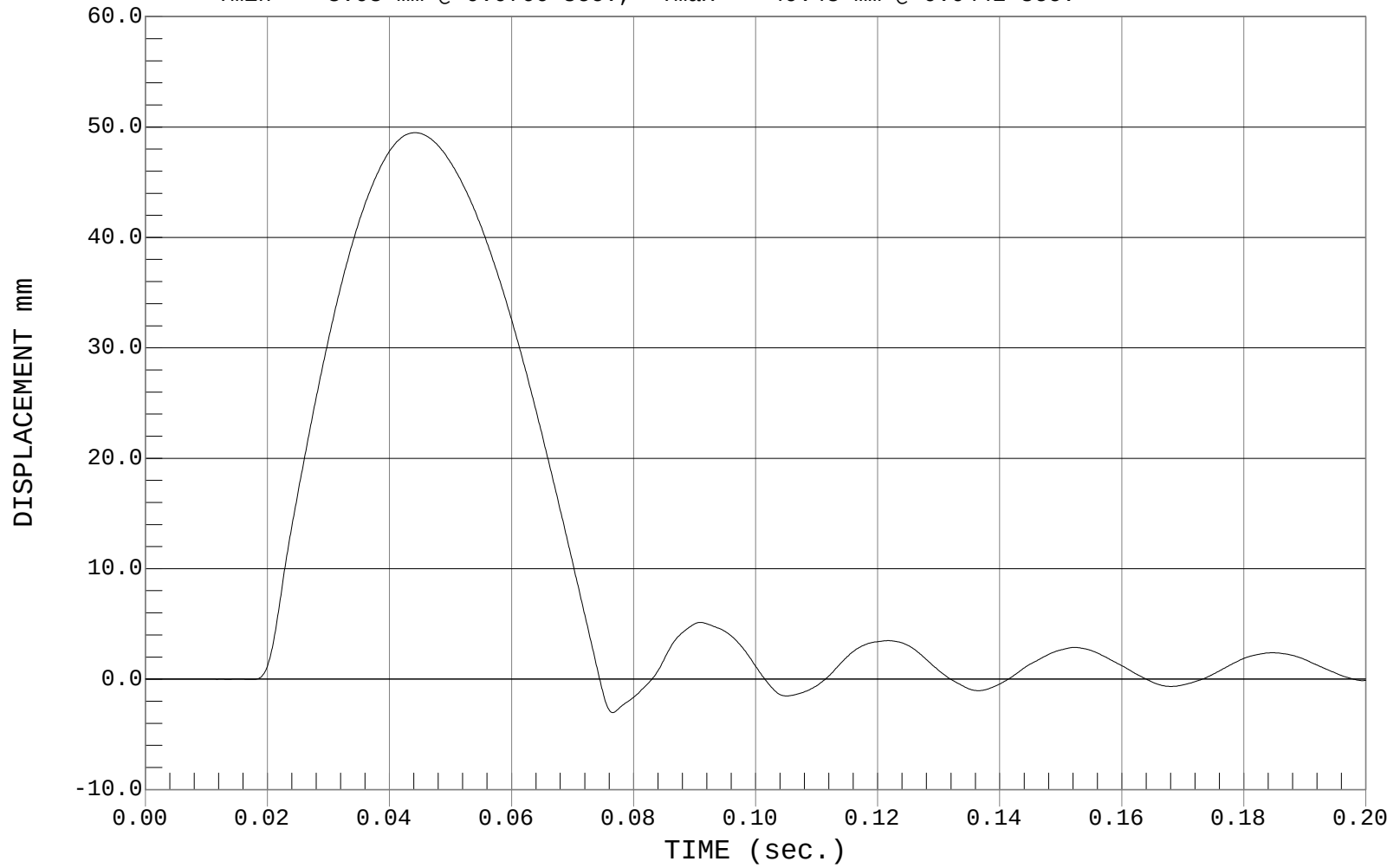
UPPER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - RIB MODULE
Component: Dummy #009

Test Date: 10-23-01
Speed: 13.12 FT/SEC, 4.00 M/SEC

— 1 DISPLACEMENT, D01554DF.D07

Ymin = -3.03 mm @ 0.0766 sec., Ymax = 49.48 mm @ 0.0442 sec.





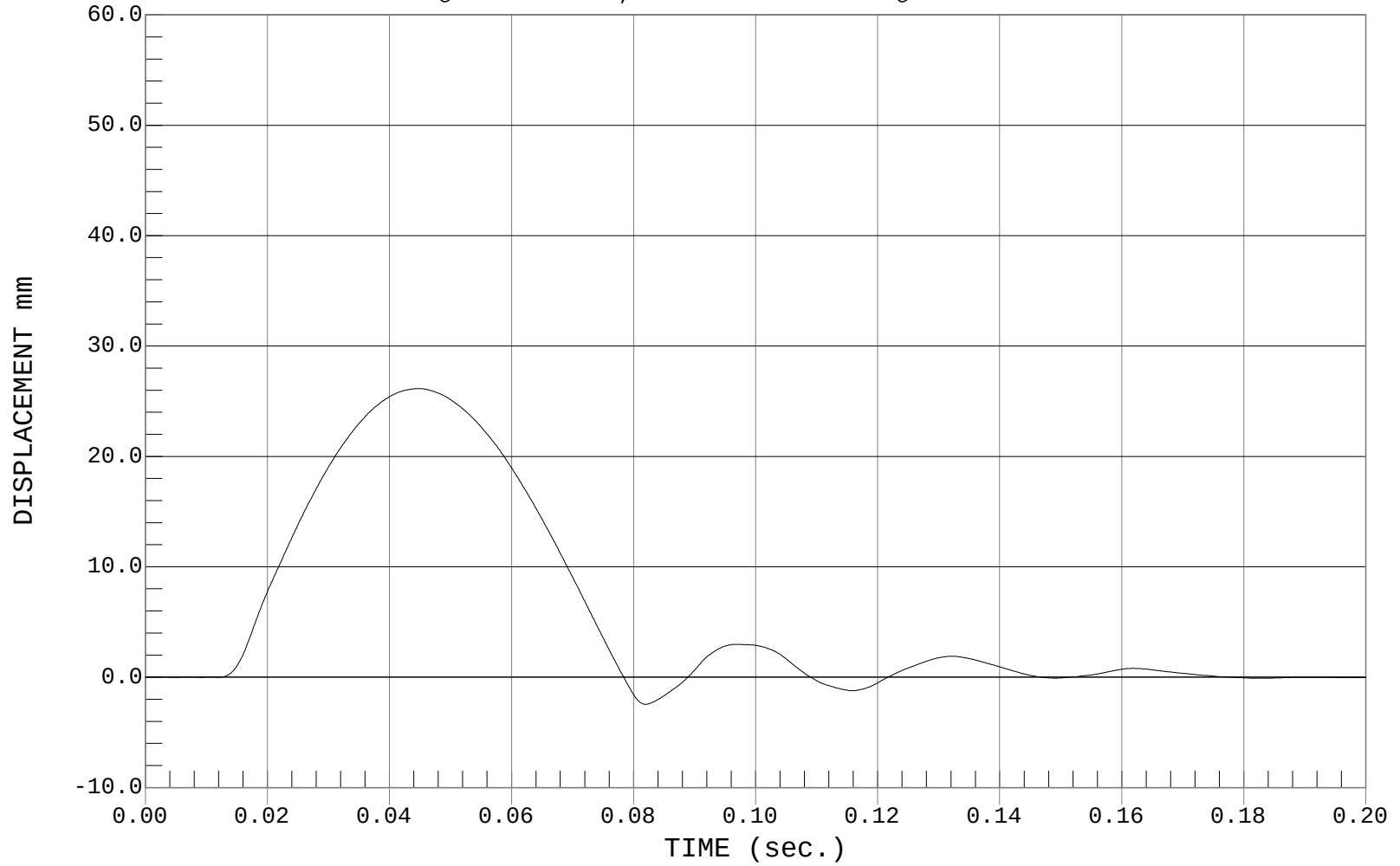
MIDDLE RIB DISPLACEMENT

Test Desc.: Dummy Calibration - RIB MODULE
Component: Dummy #009

Test Date: 10-23-01
Speed: 6.56 FT/SEC, 2.00 M/SEC

— 1 DISPLACEMENT, D01555DF.D05

Ymin = -2.46 mm @ 0.0820 sec., Ymax = 26.14 mm @ 0.0447 sec.





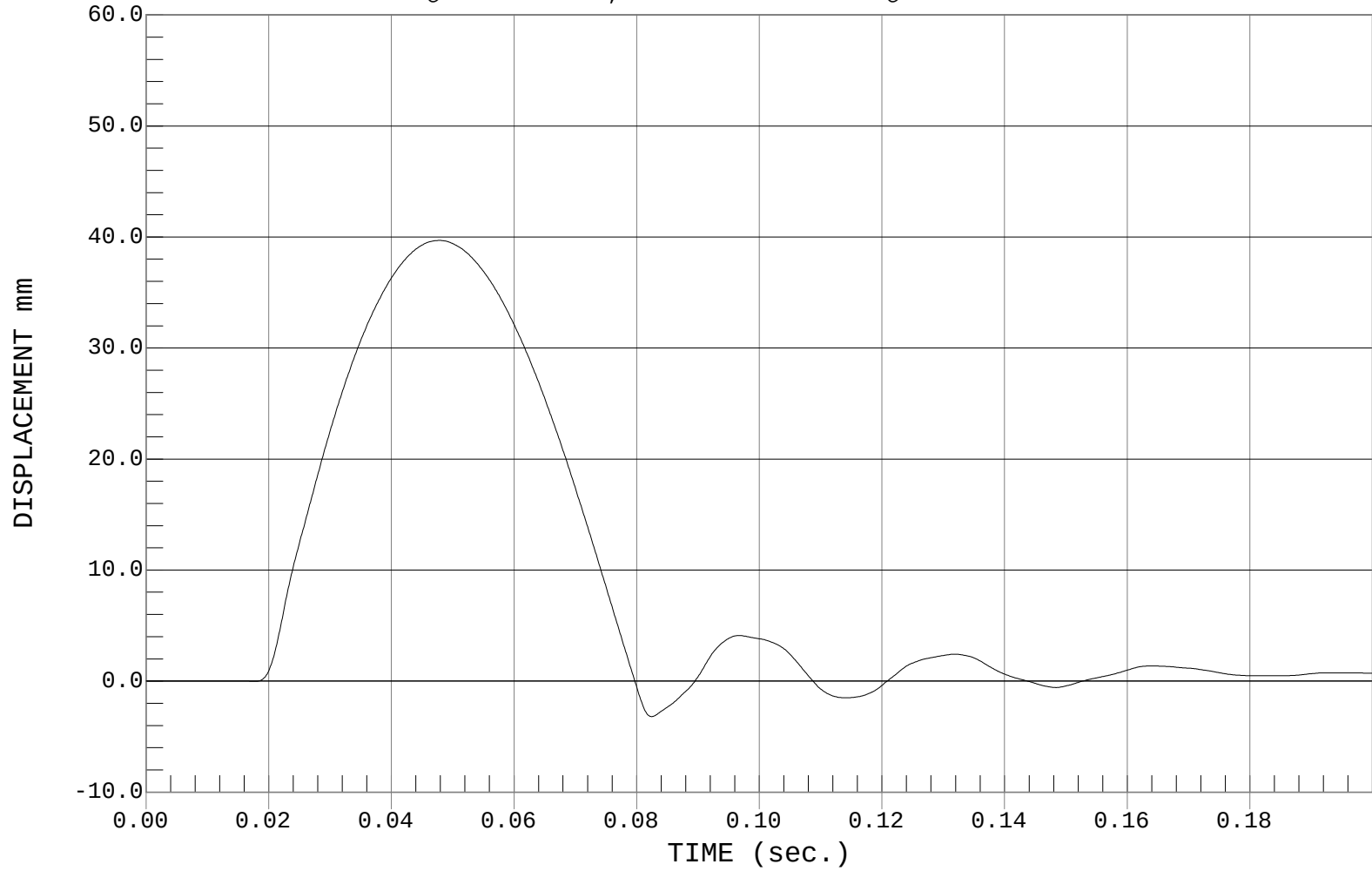
MIDDLE RIB DISPLACEMENT

Test Desc.: Dummy Calibration - RIB MODULE
Component: Dummy #009

Test Date: 10-23-01
Speed: 9.84 FT/SEC, 3.00 M/SEC

— 1 DISPLACEMENT, D01555DF.D06

Ymin = -3.2 mm @ 0.0824 sec., Ymax = 39.69 mm @ 0.0478 sec.





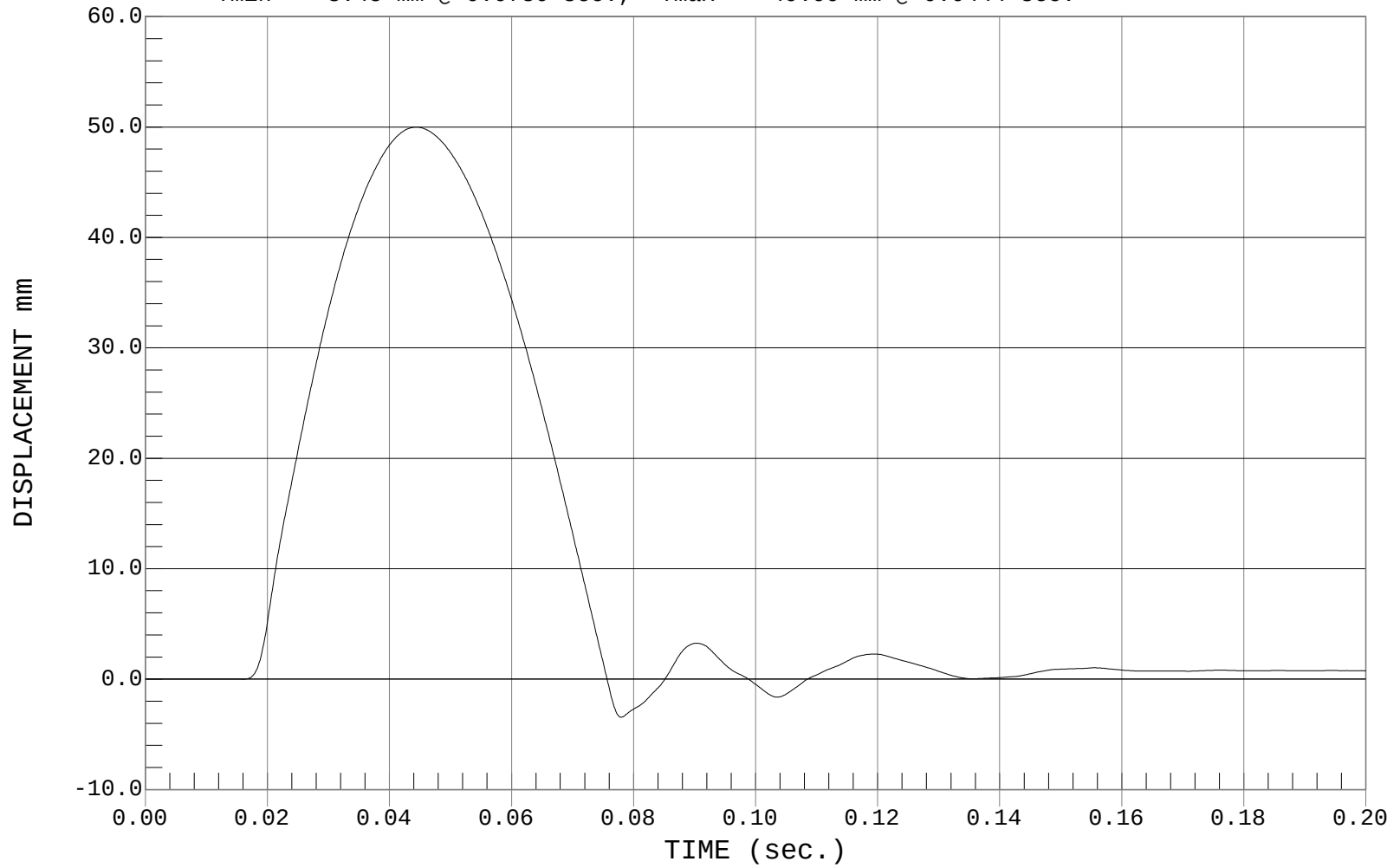
MIDDLE RIB DISPLACEMENT

Test Desc.: Dummy Calibration - RIB MODULE
Component: Dummy #009

Test Date: 10-23-01
Speed: 13.12 FT/SEC, 4.00 M/SEC

— 1 DISPLACEMENT, D01555DF.D07

Ymin = -3.45 mm @ 0.0780 sec., Ymax = 49.99 mm @ 0.0444 sec.





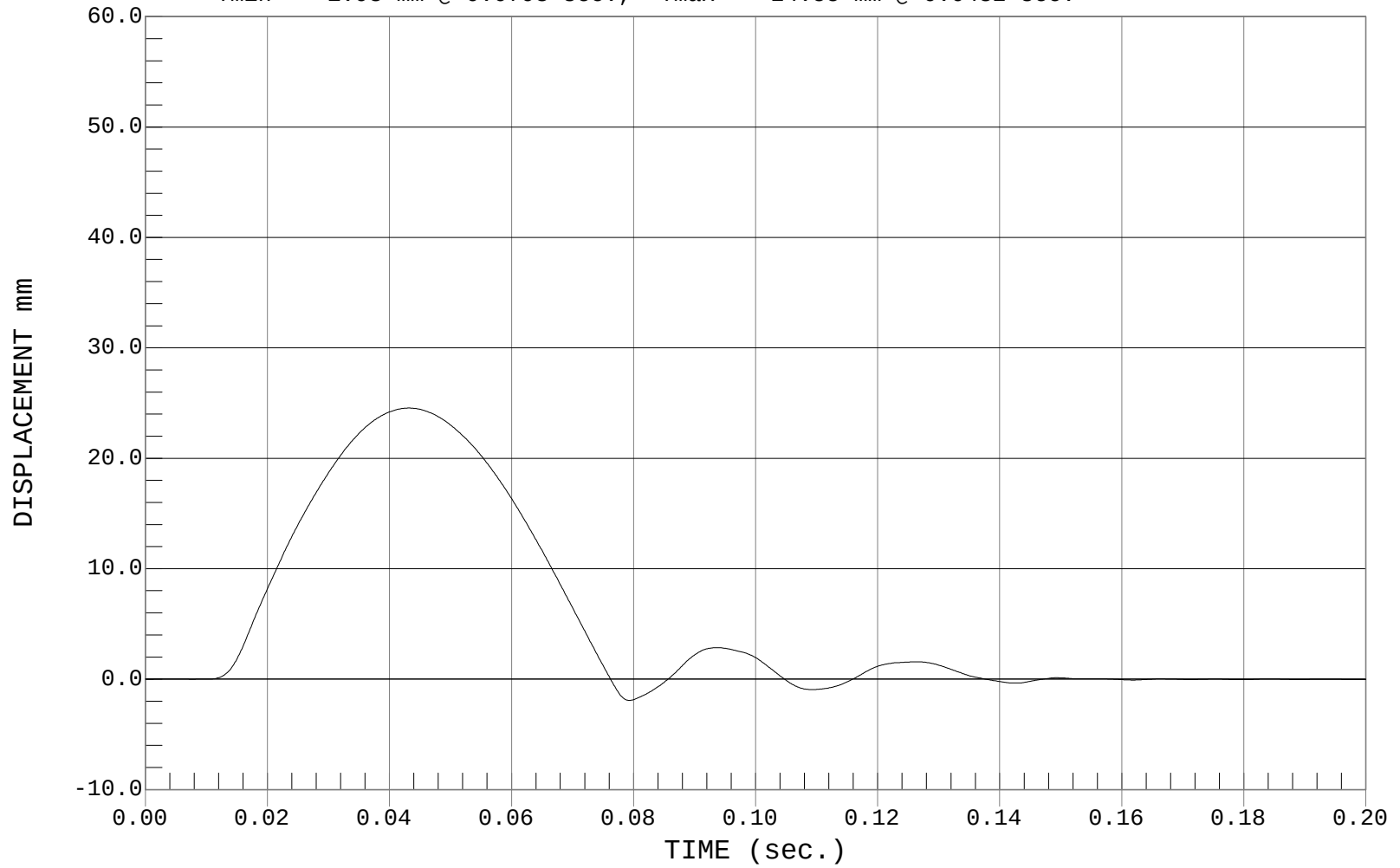
LOWER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #009

Test Date: 10-23-01
Speed: 6.56 FT/SEC, 2.00 M/SEC

— 1 DISPLACEMENT, D01556DF.D05

Ymin = -1.93 mm @ 0.0793 sec., Ymax = 24.55 mm @ 0.0432 sec.





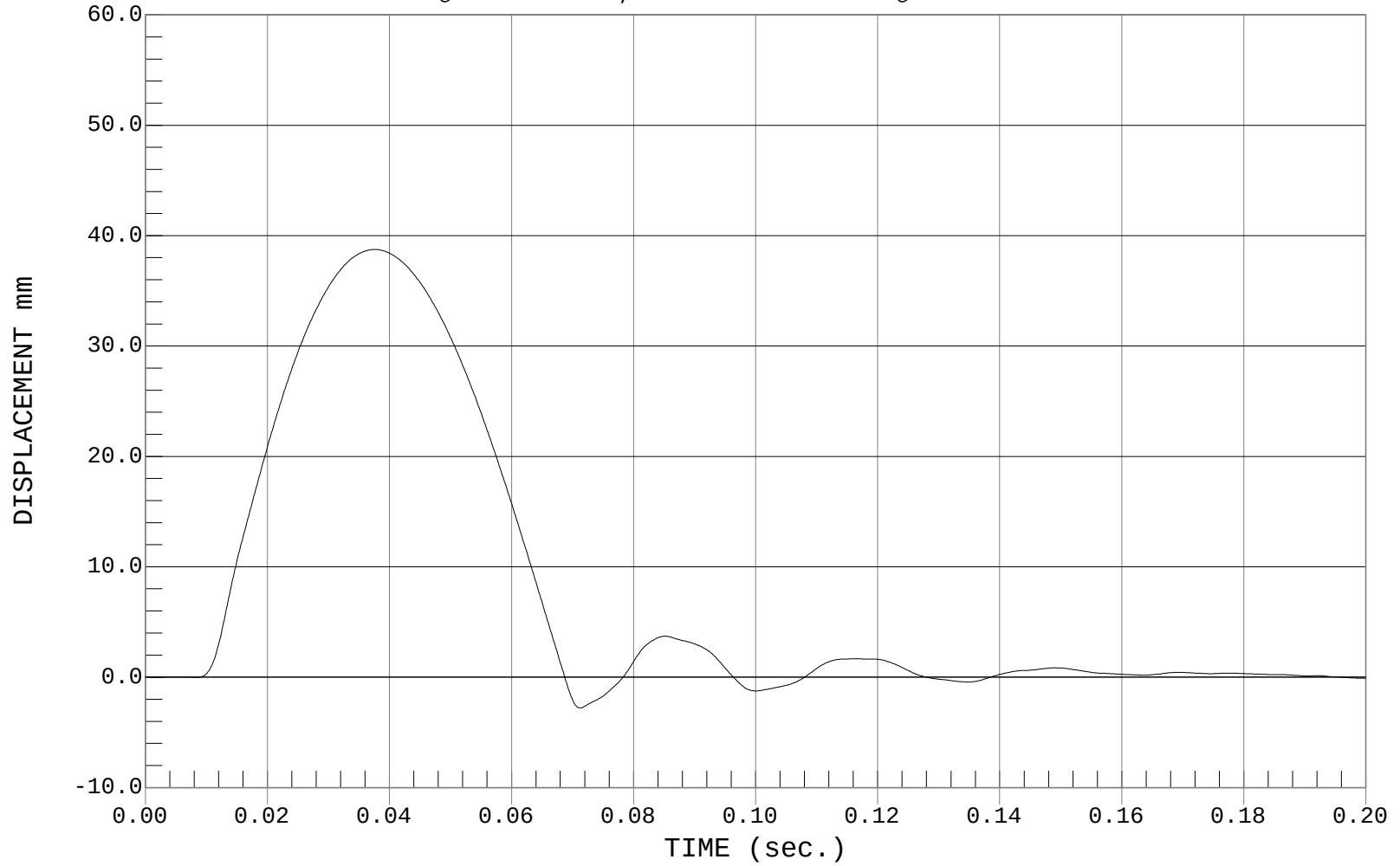
LOWER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - RIB MODULE
Component: Dummy #009

Test Date: 10-23-01
Speed: 9.84 FT/SEC, 3.00 M/SEC

— 1 DISPLACEMENT, D01556DF.D06

Ymin = -2.79 mm @ 0.0712 sec., Ymax = 38.75 mm @ 0.0377 sec.





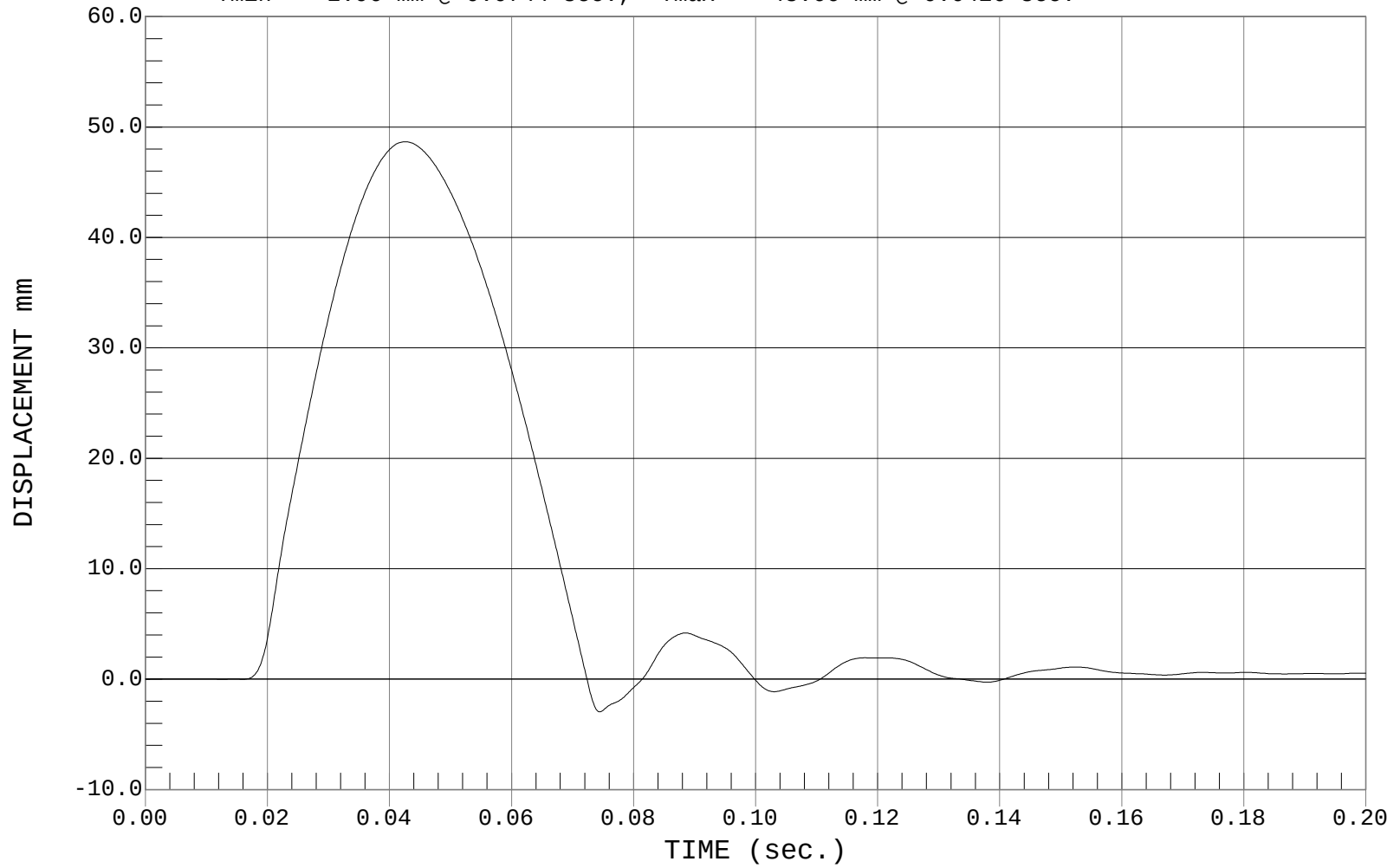
LOWER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - RIB MODULE
Component: Dummy #009

Test Date: 10-23-01
Speed: 13.12 FT/SEC, 4.00 M/SEC

— 1 DISPLACEMENT, D01556DF.D07

Ymin = -2.96 mm @ 0.0744 sec., Ymax = 48.66 mm @ 0.0426 sec.



MGA RESEARCH CORPORATION
ABDOMEN TEST
EUROSID 2 DUMMY

Date: 10/25/01

Dummy Serial Number: 009

Test Number: D011557

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.0
Relative Humidity (%)	10 – 70	28
Probe Speed (m/s)	3.90 – 4.10	3.99
Maximum Impact Force	4.00 – 4.80 kN	4.70
Time of Maximum Force	10.60 – 13.00 ms	11.10
Maximum Total Abdomen Force	2.20 – 2.70 kN	2.21
Time of Max. Total Force	10.00 – 12.30 ms	10.70

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



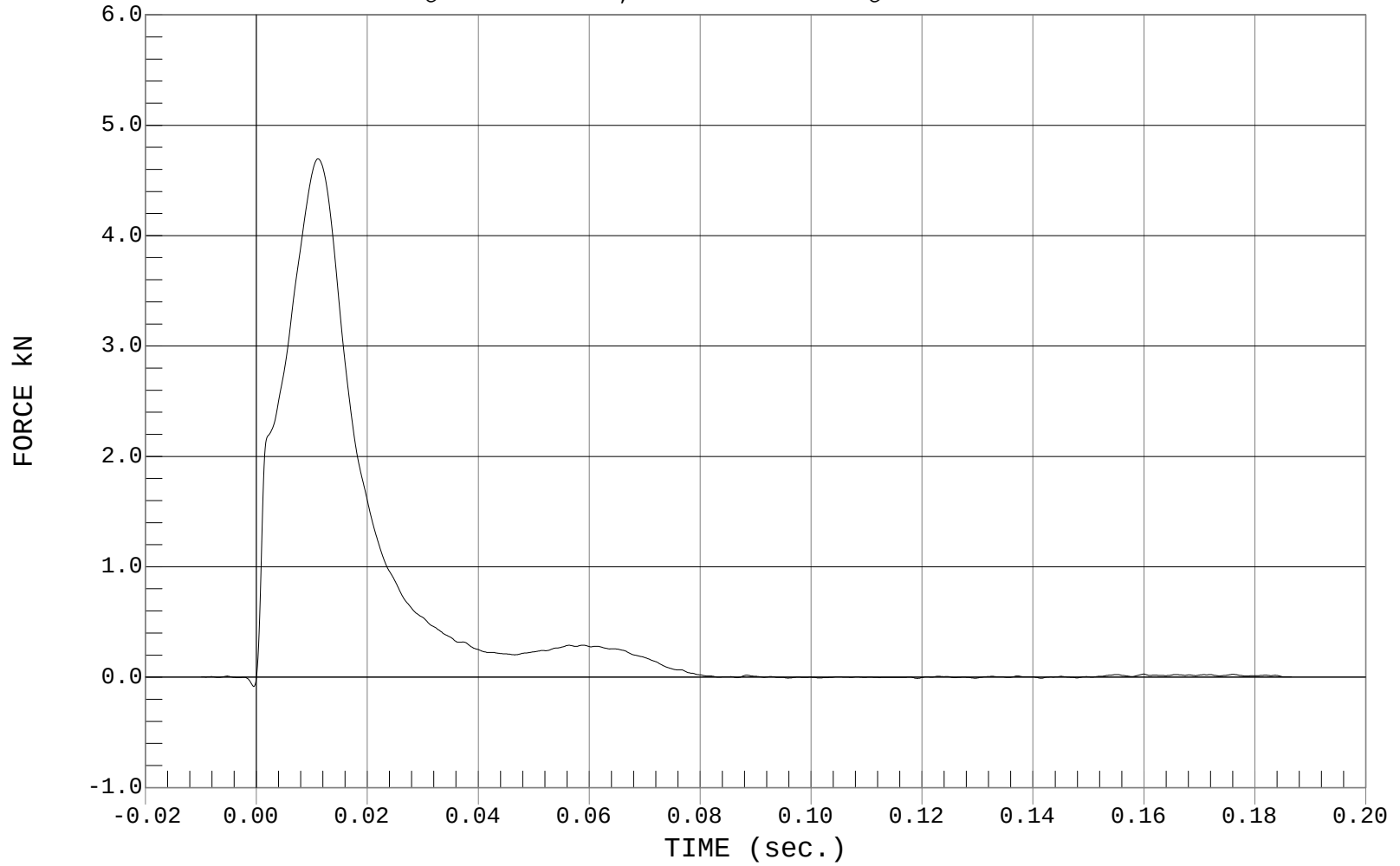
IMPACTOR FORCE

Test Desc.: Dummy Calibration - Abdomen Impact
Component: Dummy #009

Test Date: 10-25-01
Speed: 13.08 FT/SEC, 3.99 M/SEC

— 1 FORCE, D01557FT.F01

Ymin = -.08 kN @ -0.0005 sec., Ymax = 4.7 kN @ 0.0111 sec.





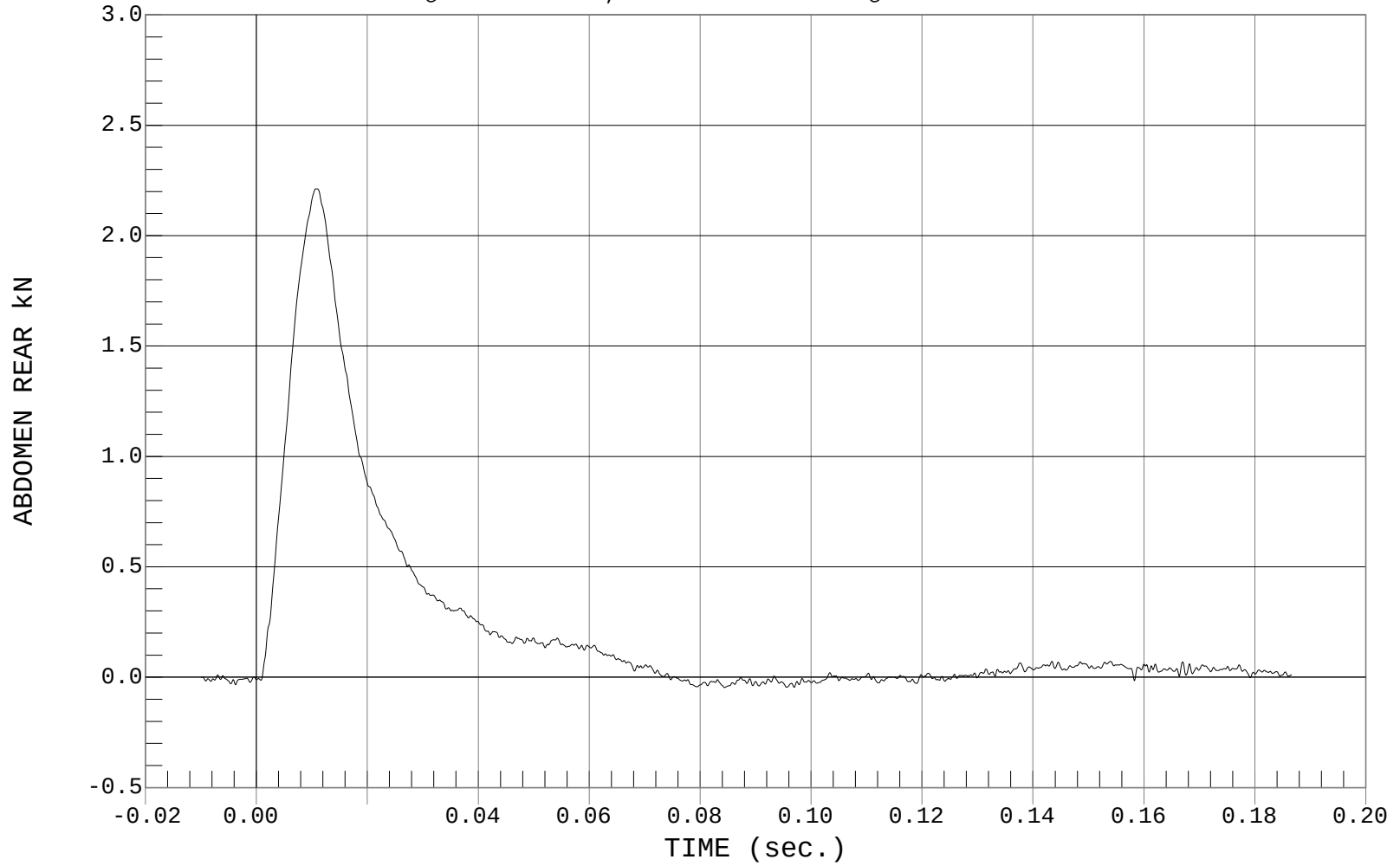
ABDOMEN FORCE

Test Desc.: Dummy Calibration - Abdomen Impact
Component: Dummy #009

Test Date: 10-25-01
Speed: 13.08 FT/SEC, 3.99 M/SEC

— 1 ABDOMEN REAR, D01557FT.F02

Ymin = -.05 kN @ 0.0844 sec., Ymax = 2.21 kN @ 0.0107 sec.



MGA RESEARCH CORPORATION
LUMBAR SPINE TEST
EUROSID 2 DUMMY

Date: 10/24/01

Dummy Serial Number: 009

Test Number: D011558

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.0 – 22.0	21.1
Relative Humidity (%)		10 – 70	58
Pendulum Speed		5.95 – 6.15	5.98
Pendulum Deceleration	10 msec	2.46 - 1.59 m/sec	-1.98
	20 msec	5.25 - 4.07 m/sec	-4.40
	25 msec	6.64 - 5.3 m/sec	-5.47
	30 msec	≥ -6.5 m/sec	-6.13
Maximum Flexion Angle		45.0 – 55.0 deg	50.5
Time of Max. Flexion Angle		39.0 – 53.0 ms	44.7
Maximum Angle Theta (A)		31.0 – 35.0 deg	32.8
Time of Max. Theta (A)		44.0 – 52.0 ms	44.7
Maximum Angle Theta (B)		28.24– 30.74 deg	28.66
Time of Max. Theta (B)		44.0 – 52.0 ms	46.3

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



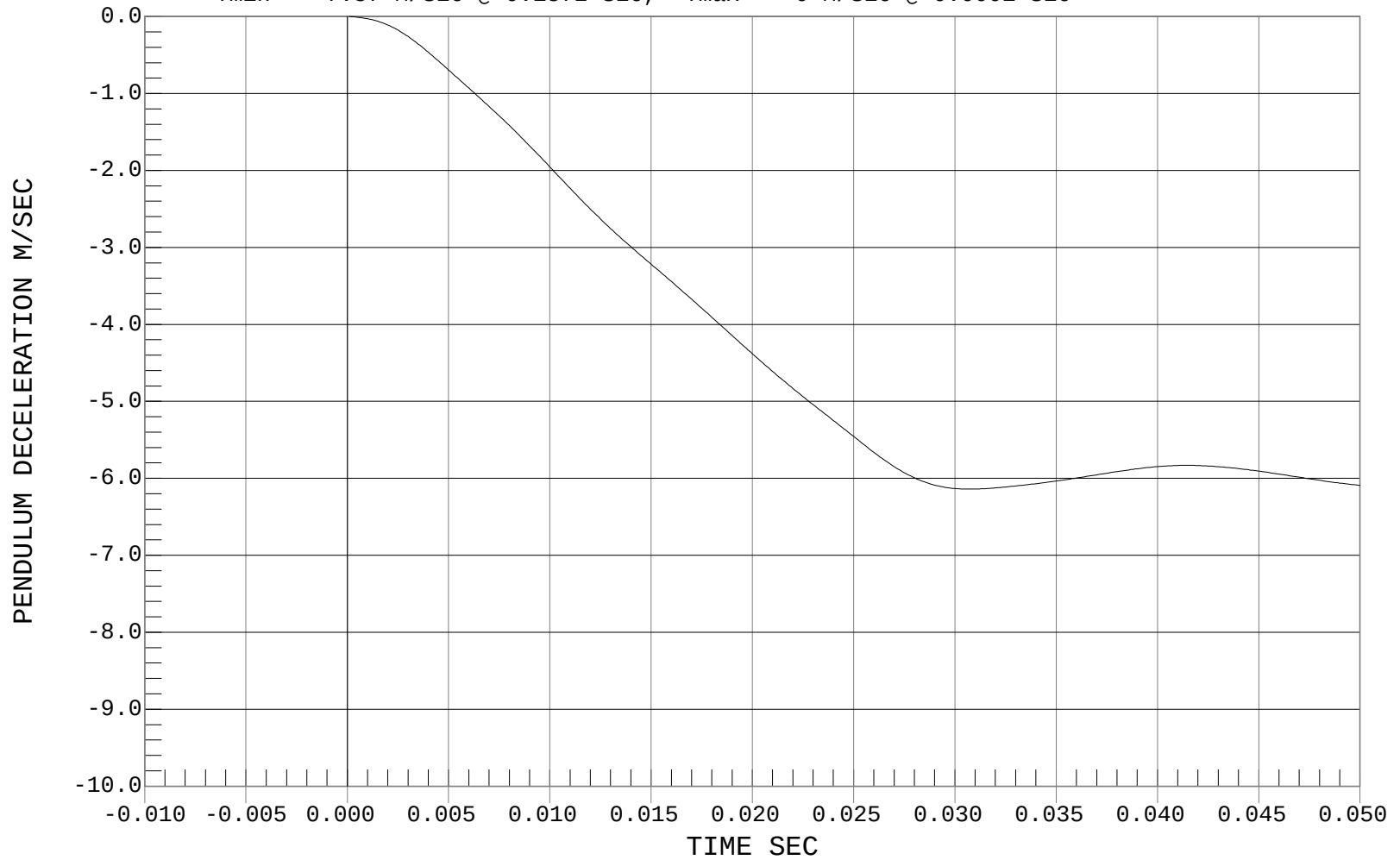
PENDULUM DECELERATION

Test Desc.: Dummy Calibration -
Component: Dummy #009

Test Date: 10-24-01
Speed: 19.63 FT/SEC, 5.98 M/SEC

— 1 PENDULUM DECELERATION, D01558AI.V04

Ymin = -7.37 M/SEC @ 0.1372 SEC, Ymax = 0 M/SEC @ 0.0001 SEC





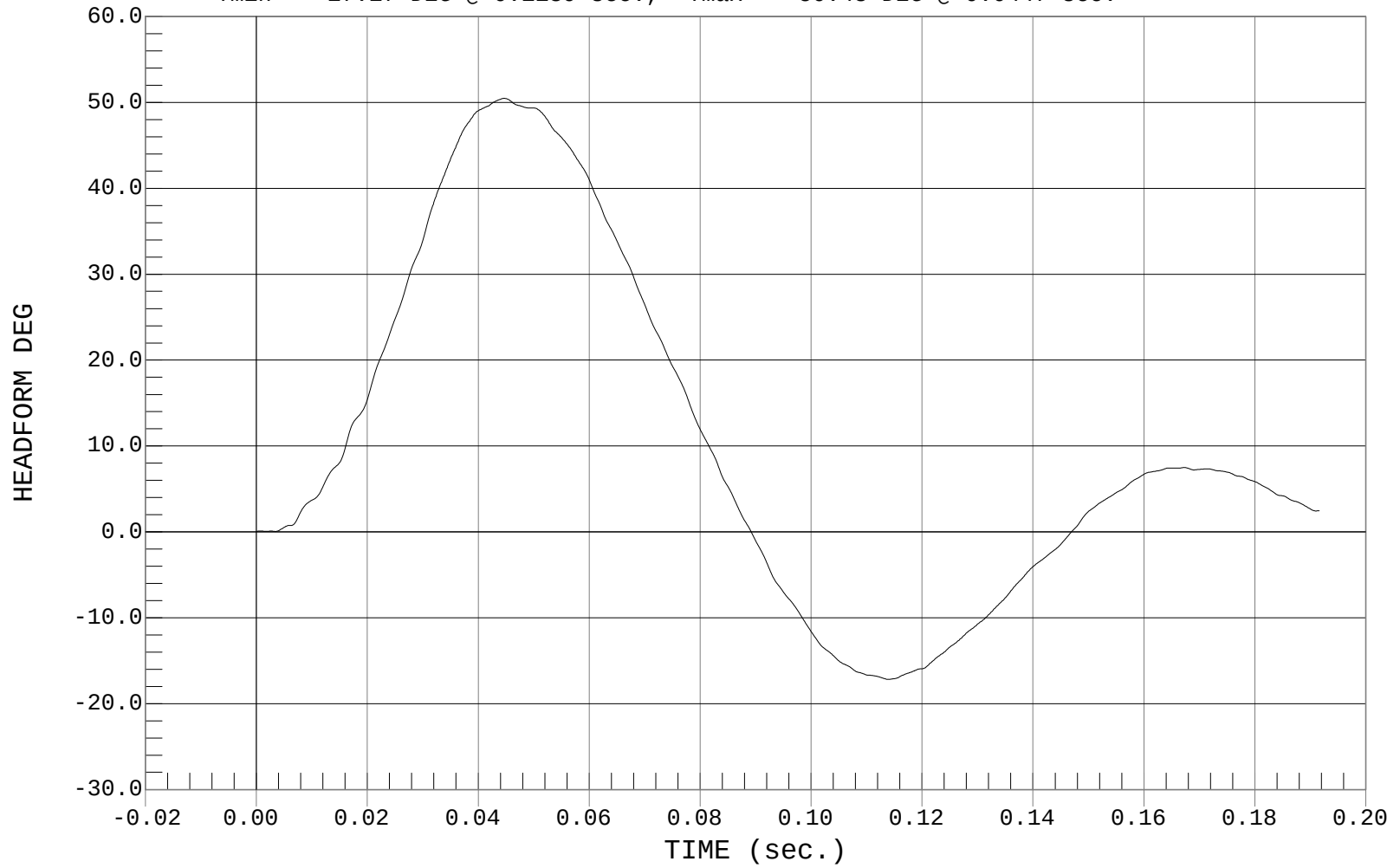
FLEXION ANGLE

Test Desc.: Dummy Calibration -
Component: Dummy #009

Test Date: 10-24-01
Speed: 19.63 FT/SEC, 5.98 M/SEC

— 1 HEADFORM, D01558DT.D08

Ymin = -17.17 DEG @ 0.1139 sec., Ymax = 50.48 DEG @ 0.0447 sec.





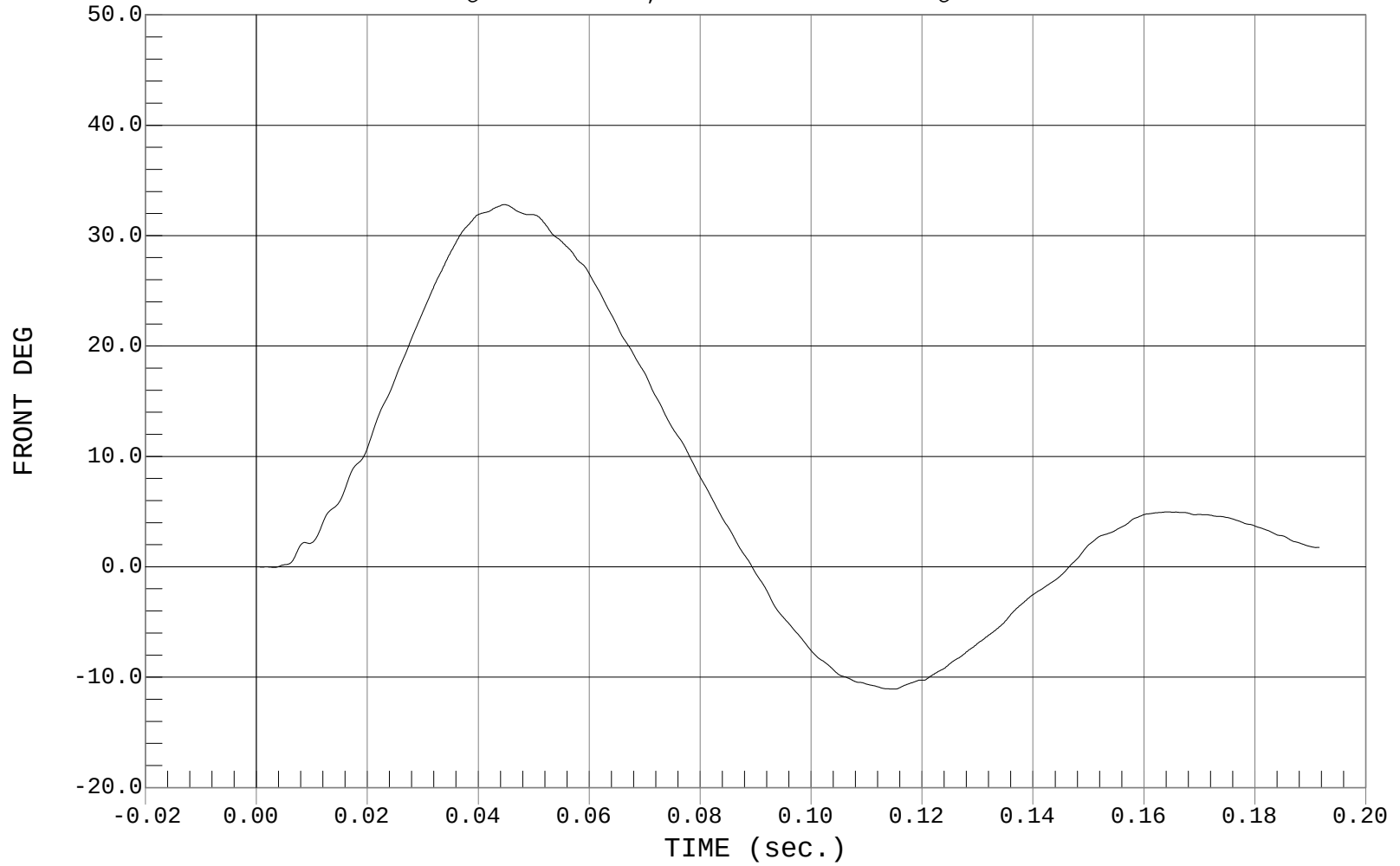
THETA A

Test Desc.: Dummy Calibration -
Component: Dummy #009

Test Date: 10-24-01
Speed: 19.63 FT/SEC, 5.98 M/SEC

— 1 FRONT, D01558DT.D05

Ymin = -11.08 DEG @ 0.1151 sec., Ymax = 32.81 DEG @ 0.0447 sec.





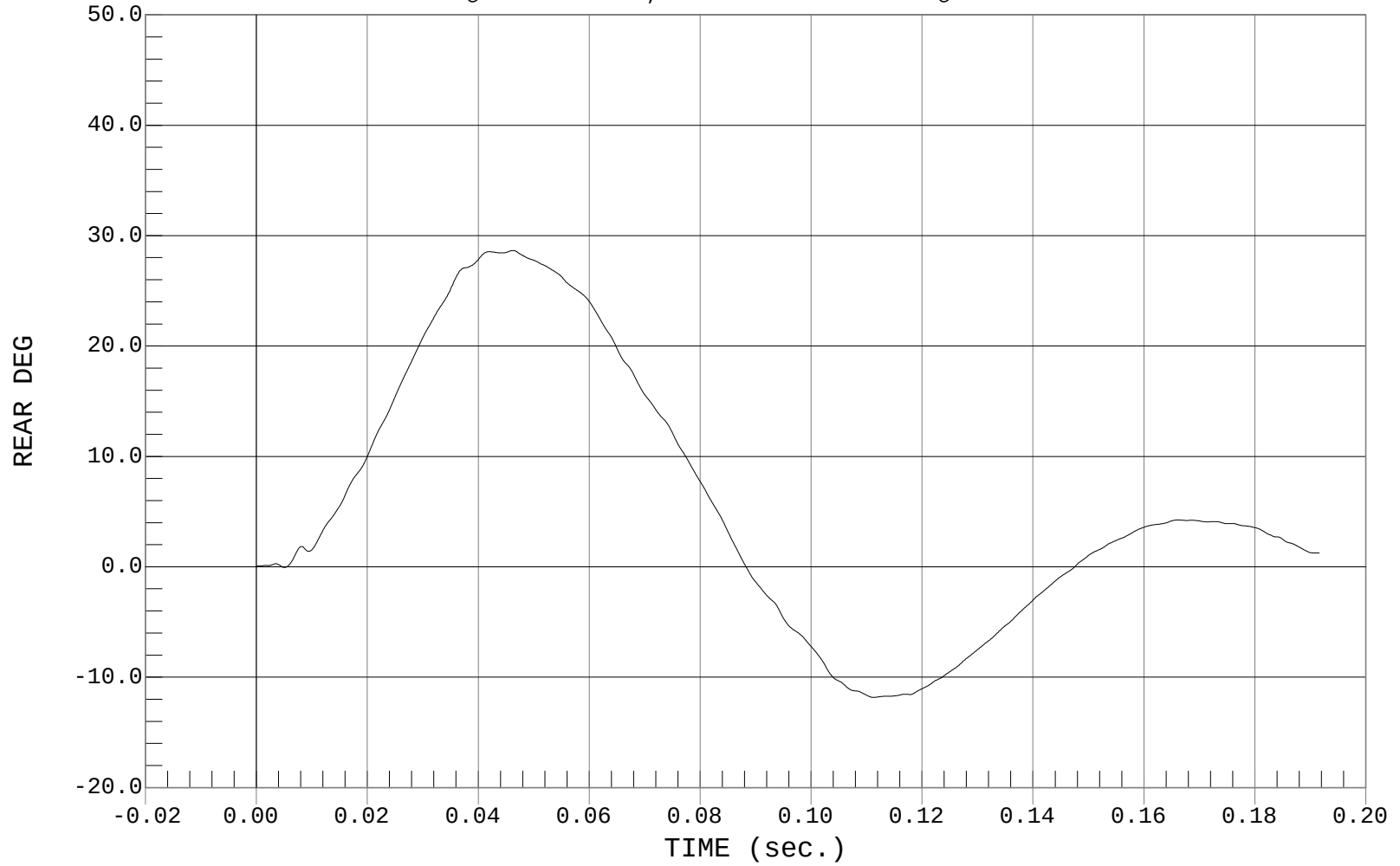
THETA B

Test Desc.: Dummy Calibration -
Component: Dummy #009

Test Date: 10-24-01
Speed: 19.63 FT/SEC, 5.98 M/SEC

— 1 REAR, D01558DT.D06

Ymin = -11.83 DEG @ 0.1113 sec., Ymax = 28.66 DEG @ 0.0463 sec.



MGA RESEARCH CORPORATION
PELVIS TEST
EUROSID 2 DUMMY

Date: 10/25/01

Dummy Serial Number: 009

Test Number: D011559

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.0
Relative Humidity (%)	10 – 70	27
Pendulum Speed	6.20 – 6.30 m/s	6.22
Maximum Impactor Force	9.80 – 12.20 kN	10.78
Time of Max. Impactor Force	9.50 – 12.50 ms	11.40
Maximum Pubic Force	2.65 – 3.35 kN	3.32
Time of Max. Pubic Force	10.00 – 13.00 ms	11.90

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



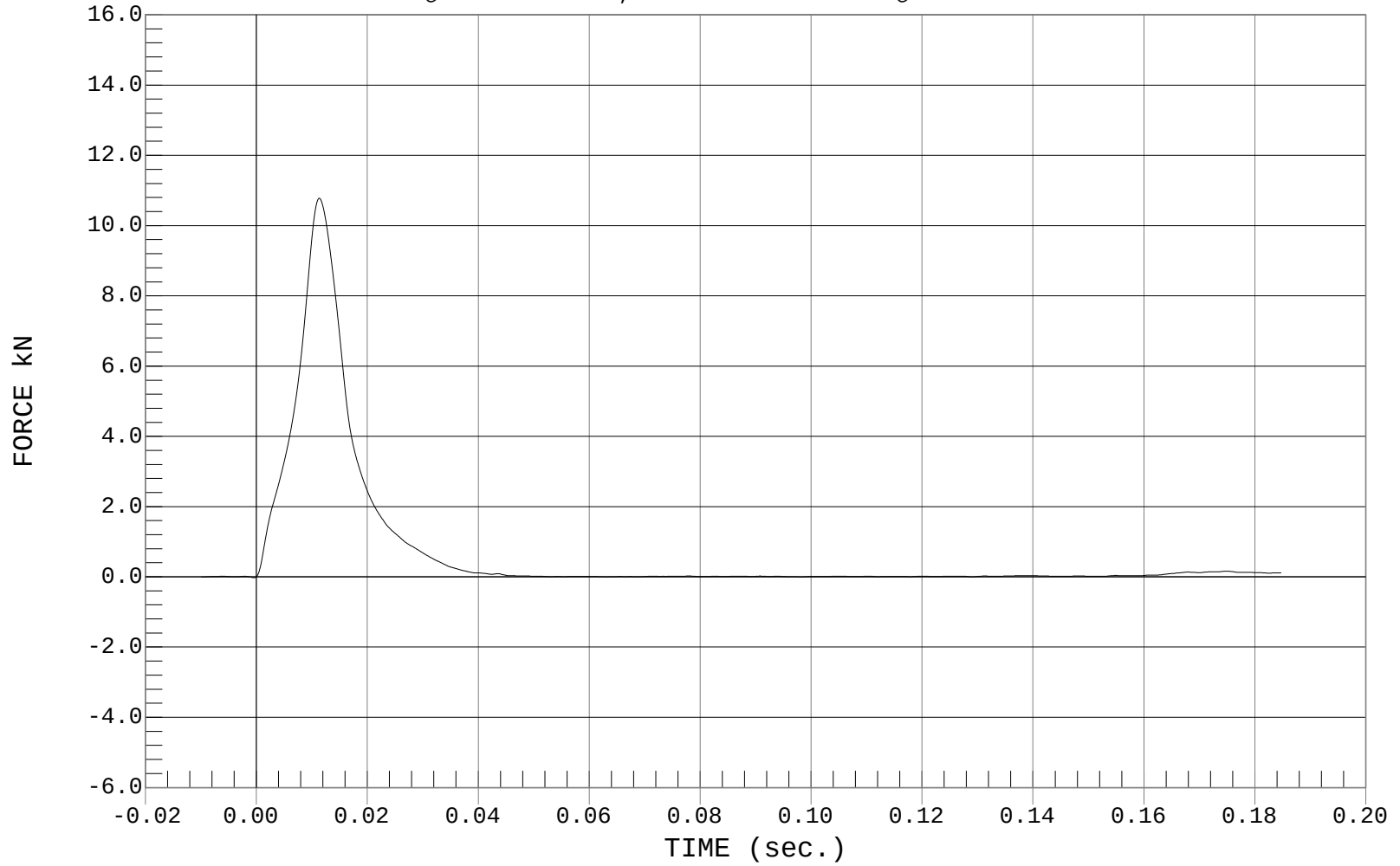
IMPACTOR FORCE

Test Desc.: Dummy Calibration - Pelvis Impact
Component: Dummy #009

Test Date: 10-25-01
Speed: 20.42 FT/SEC, 6.22 M/SEC

— 1 FORCE, D01559FT.F01

Ymin = -.03 kN @ -0.0004 sec., Ymax = 10.78 kN @ 0.0114 sec.





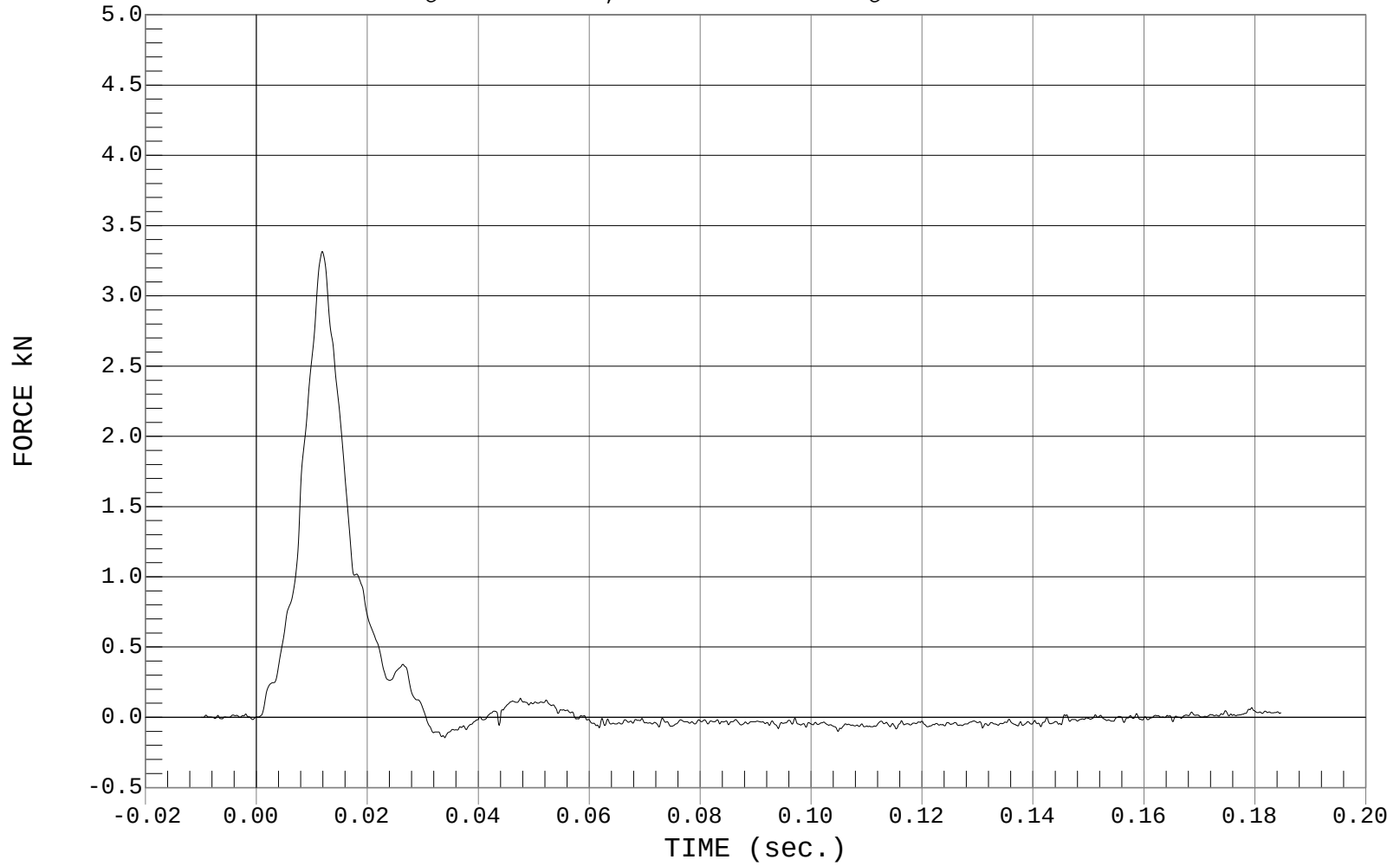
PUBIC FORCE

Test Desc.: Dummy Calibration - Pelvis Impact
Component: Dummy #009

Test Date: 10-25-01
Speed: 20.42 FT/SEC, 6.22 M/SEC

— 1 FORCE, D01559FT.F02

Ymin = -.14 kN @ 0.0340 sec., Ymax = 3.32 kN @ 0.0119 sec.



CERTIFICATION DATA

Dummy Serial Number: 010

Calibration Test Results Summary

Dummy Serial Number: 010

Pre-Test Calibration

Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all impact test requirements.
Shoulder Impact Test:	The shoulder passed all impact test requirements.
Rib Tests:	All ribs passed all impact test requirements.
Abdomen Test:	The abdomen passed all impact test requirements.
Lumbar Spine Test:	The lumbar spine passed all impact test requirements.
Pelvis Test:	The pelvis passed all impact test requirements.

MGA RESEARCH CORPORATION
HEAD DROP TEST
EUROSID 2 DUMMY

Date: 10/24/01

Dummy Serial Number: 010

Test Number: D011521

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.1
Relative Humidity (%)	10 – 70	57
Peak Resultant Acceleration	100 – 150 g's	141
Time of Max. Res. Acceleration		24.4 msec

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



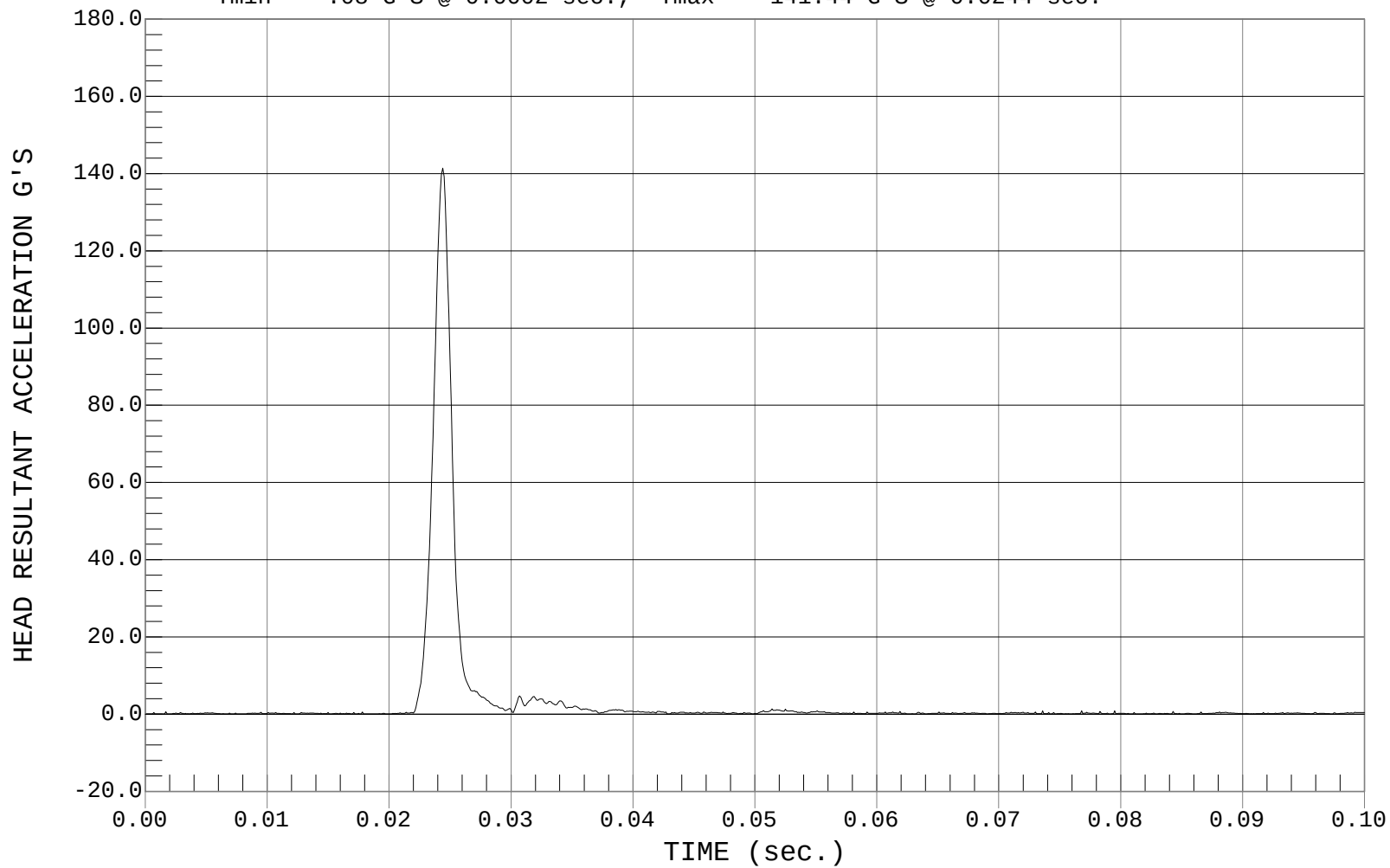
PEAK RESULTANT ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #010

Test Date: 10-24-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

— 1 HEAD RESULTANT ACCELERATION, D01521AV.A01

Ymin = .08 G'S @ 0.0002 sec., Ymax = 141.44 G'S @ 0.0244 sec.



MGA RESEARCH CORPORATION
NECK PENDULUM TEST
EUROSID 2 DUMMY

Date: 10/24/01

Dummy Serial Number: 010

Test Number: D011522

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.0 – 22.0	21.2
Relative Humidity (%)		10 – 70	58
Pendulum Speed		3.3 - 3.5	3.3
Pendulum Deceleration	3 msec	1.25 - 1.53 m/sec	-.32
	8 msec	1.59 - 2.04 m/sec	-1.66
	14 msec	3.20 - 3.85 m/sec	-3.29
Maximum Flexion Angle		49.0 – 59.0 deg	58.3
Time of Max. Flexion Angle		54.0 – 66.0 ms	60.8
Maximum Angle Theta (A)		32.0 – 37.0 deg	35.3
Time of Max. Theta (A)		53.0 – 63.0 ms	61.0
Maximum Angle Theta (B)		30.34 – 32.84 deg	31.14
Time of Max. Theta (B)		54.0 – 64.0 ms	61.1

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



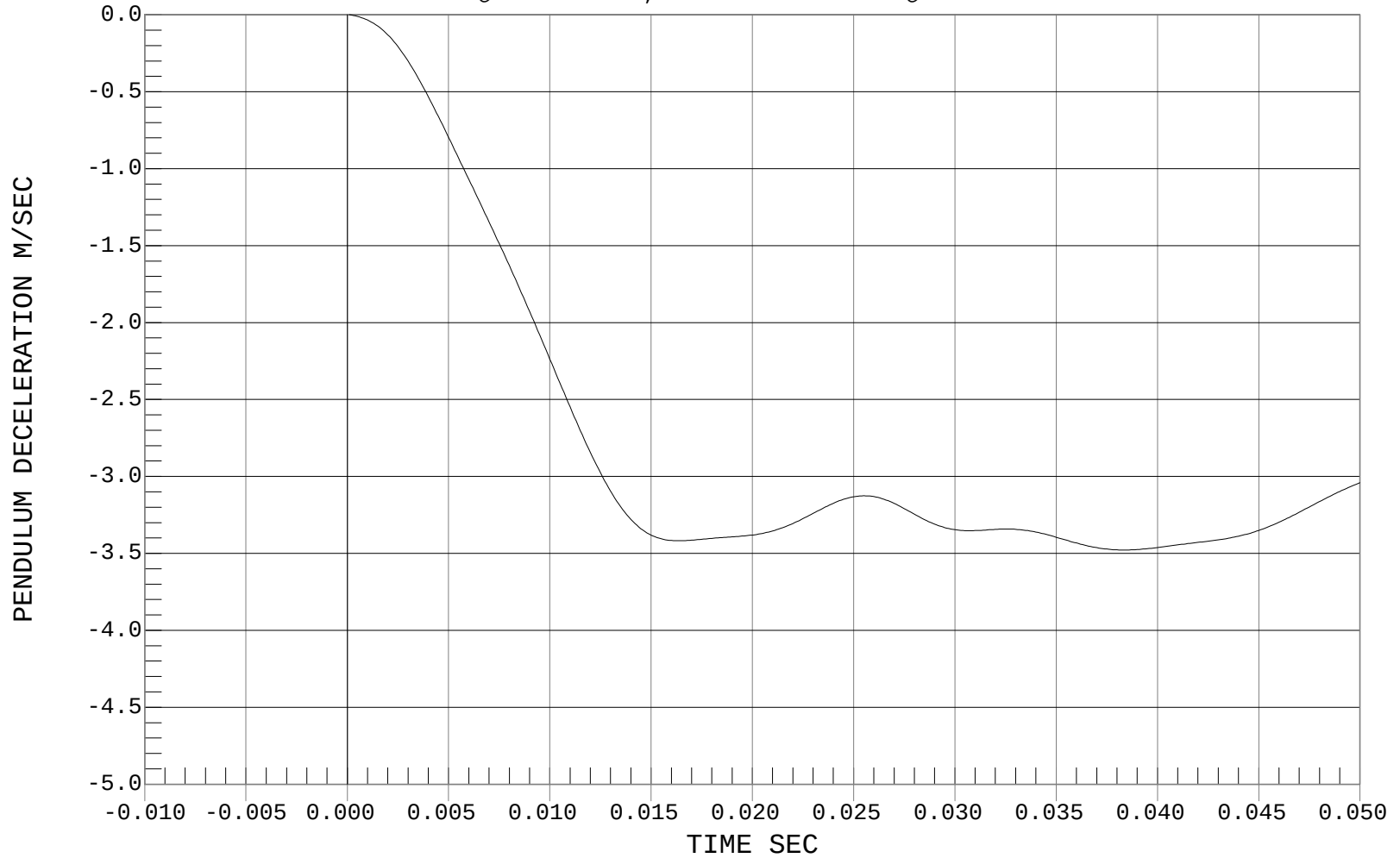
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #010

Test Date: 10-24-01
Speed: 10.95 FT/SEC, 3.34 M/SEC

— 1 PENDULUM DECELERATION, D01522AI.V04

Ymin = -4.17 M/SEC @ 0.01903 SEC, Ymax = 0 M/SEC @ 0.00001 SEC



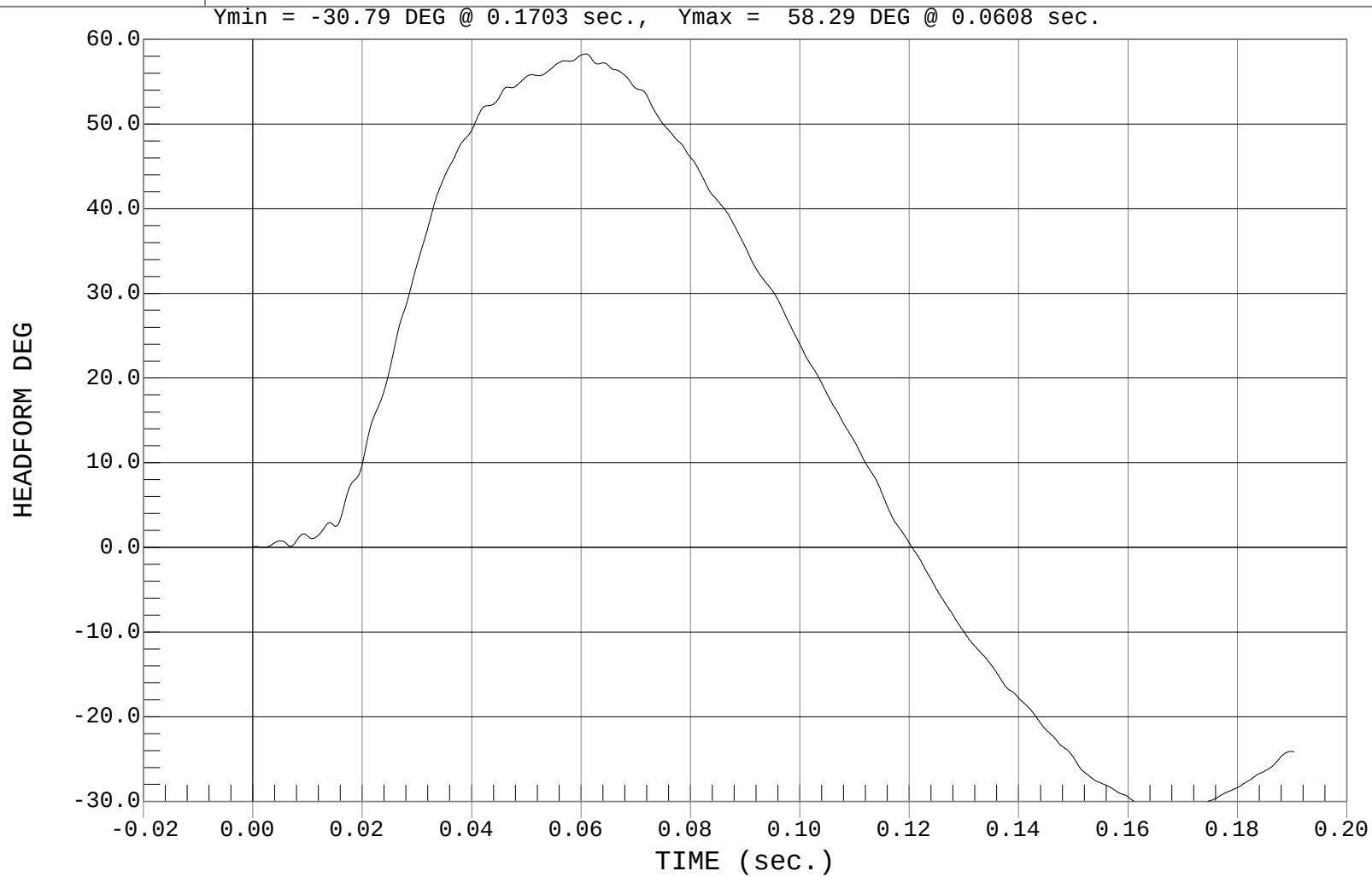


FLEXION ANGLE

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #010

Test Date: 10-24-01
Speed: 10.95 FT/SEC, 3.34 M/SEC

— 1 HEADFORM, D01522DT.D08





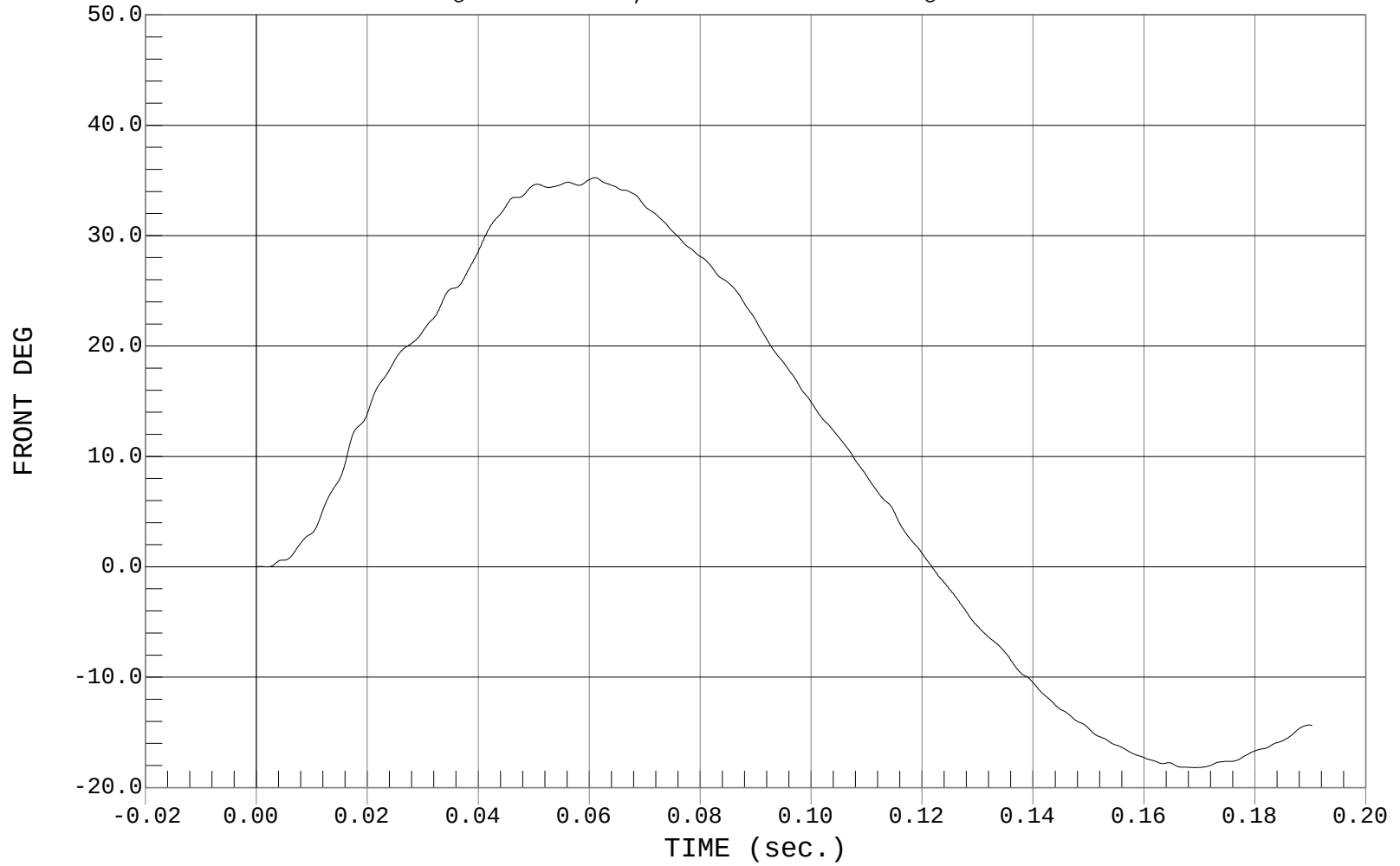
THETA A

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #010

Test Date: 10-24-01
Speed: 10.95 FT/SEC, 3.34 M/SEC

— 1 FRONT, D01522DT.D05

Ymin = -18.2 DEG @ 0.1692 sec., Ymax = 35.25 DEG @ 0.0610 sec.





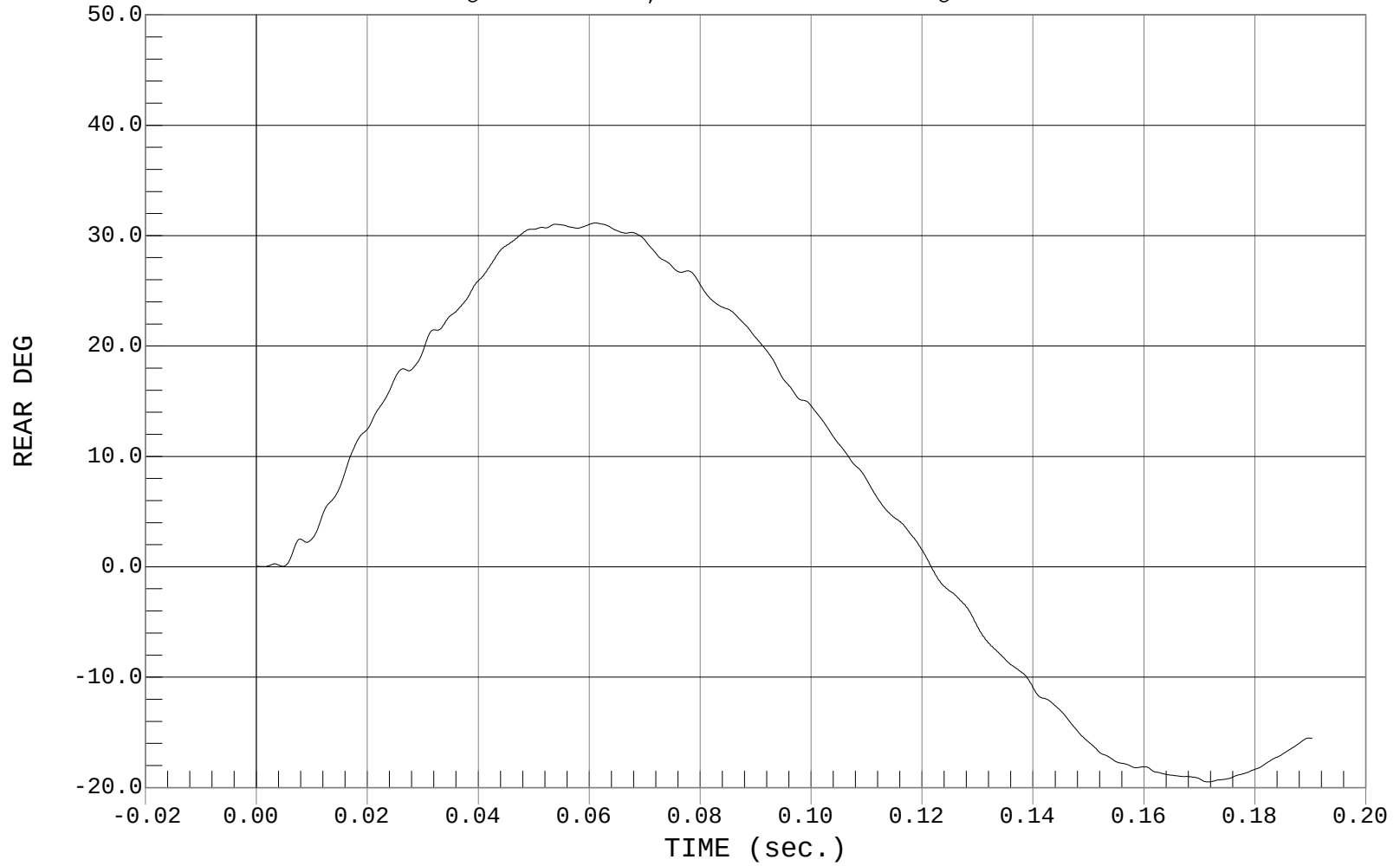
THETA B

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #010

Test Date: 10-24-01
Speed: 10.95 FT/SEC, 3.34 M/SEC

1 REAR, D01522DT.D06

Ymin = -19.49 DEG @ 0.1716 sec., Ymax = 31.14 DEG @ 0.0611 sec.



MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
EUROSID 2 DUMMY

Date: 10/24/01

Dummy Serial Number: 010

Test Number: D011523

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.0
Relative Humidity (%)	10 – 70	57
Pendulum Speed	4.2 – 4.4 m/s	4.3
Max. Resultant Acceleration	7.5 – 10.5 g's	8.7
Time of Max. Pendulum Acceleration		23.3 msec

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



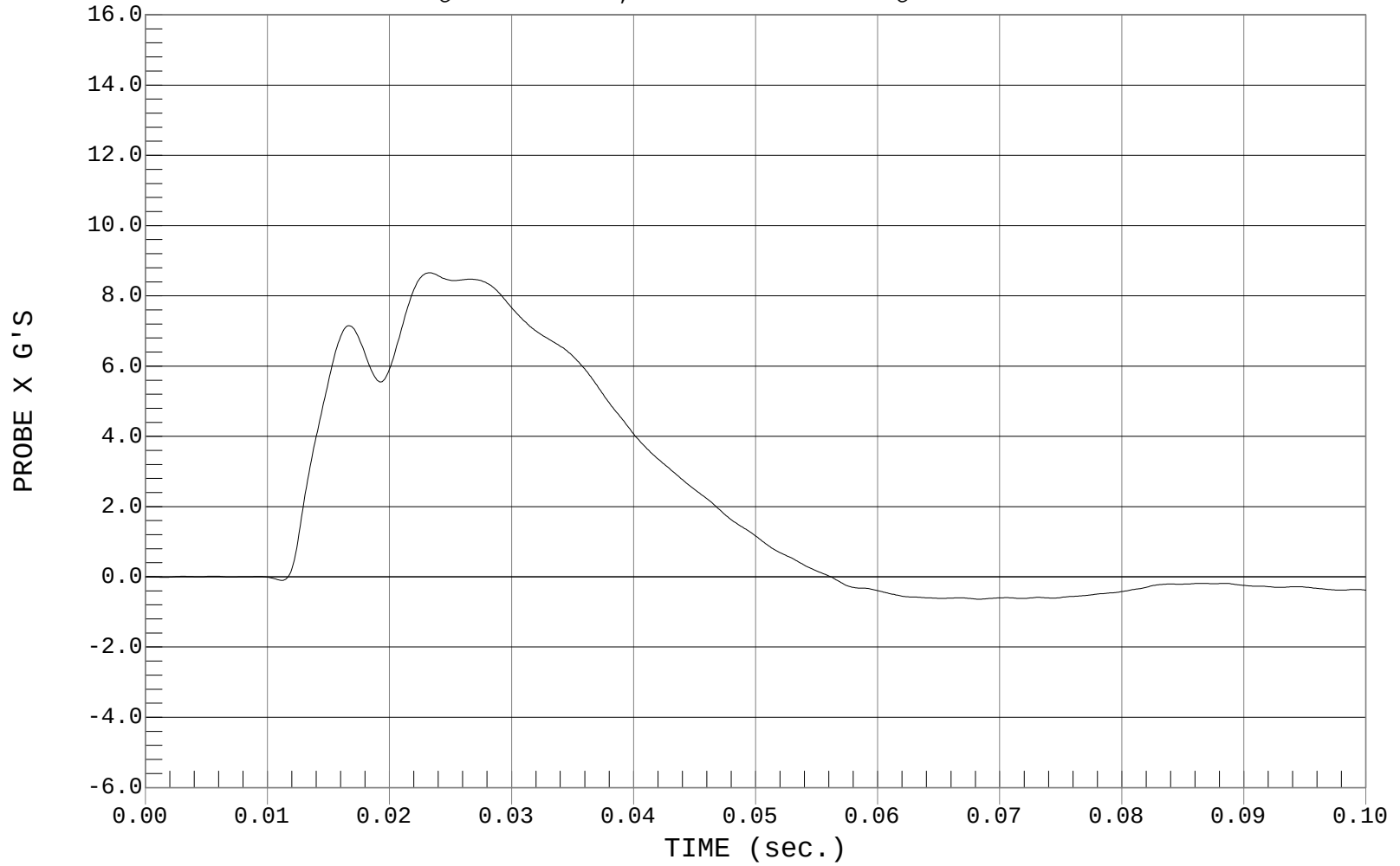
SHOULDER ACCELERATION

Test Desc.: Dummy Calibration - Shoulder Impact
Component: Dummy #010

Test Date: 10-24-01
Speed: 14.08 FT/SEC, 4.29 M/SEC

— 1 PROBE X, D01523AF.A01

Ymin = -0.63 G'S @ 0.0683 sec., Ymax = 8.66 G'S @ 0.0233 sec.



MGA RESEARCH CORPORATION
UPPER/MIDDLE/LOWER RIB TESTS
SIDE IMPACT DUMMY (SID)

Date: 10/22/01
Dummy Serial Number: 010
Test Number: D011524/5/6

UPPER RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.3
Relative Humidity (%)	10 – 70	51.4
Displacement at 2 m/s	23.5 – 27.5 mm	24.2
Displacement at 3 m/s	36.0 – 40.0 mm	37.6
Displacement at 4 m/s	46.0 – 51.0 mm	49.3

MIDDLE RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.4
Relative Humidity (%)	10 – 70	51
Displacement at 2 m/s	23.5 – 27.5 mm	26.1
Displacement at 3 m/s	36.0 – 40.0 mm	38.6
Displacement at 4 m/s	46.0 – 51.0 mm	50.2

LOWER RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.5
Relative Humidity (%)	10 – 70	52
Displacement at 2 m/s	23.5 – 27.5 mm	25.6
Displacement at 3 m/s	36.0 – 40.0 mm	39.6
Displacement at 4 m/s	46.0 – 51.0 mm	50.1

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



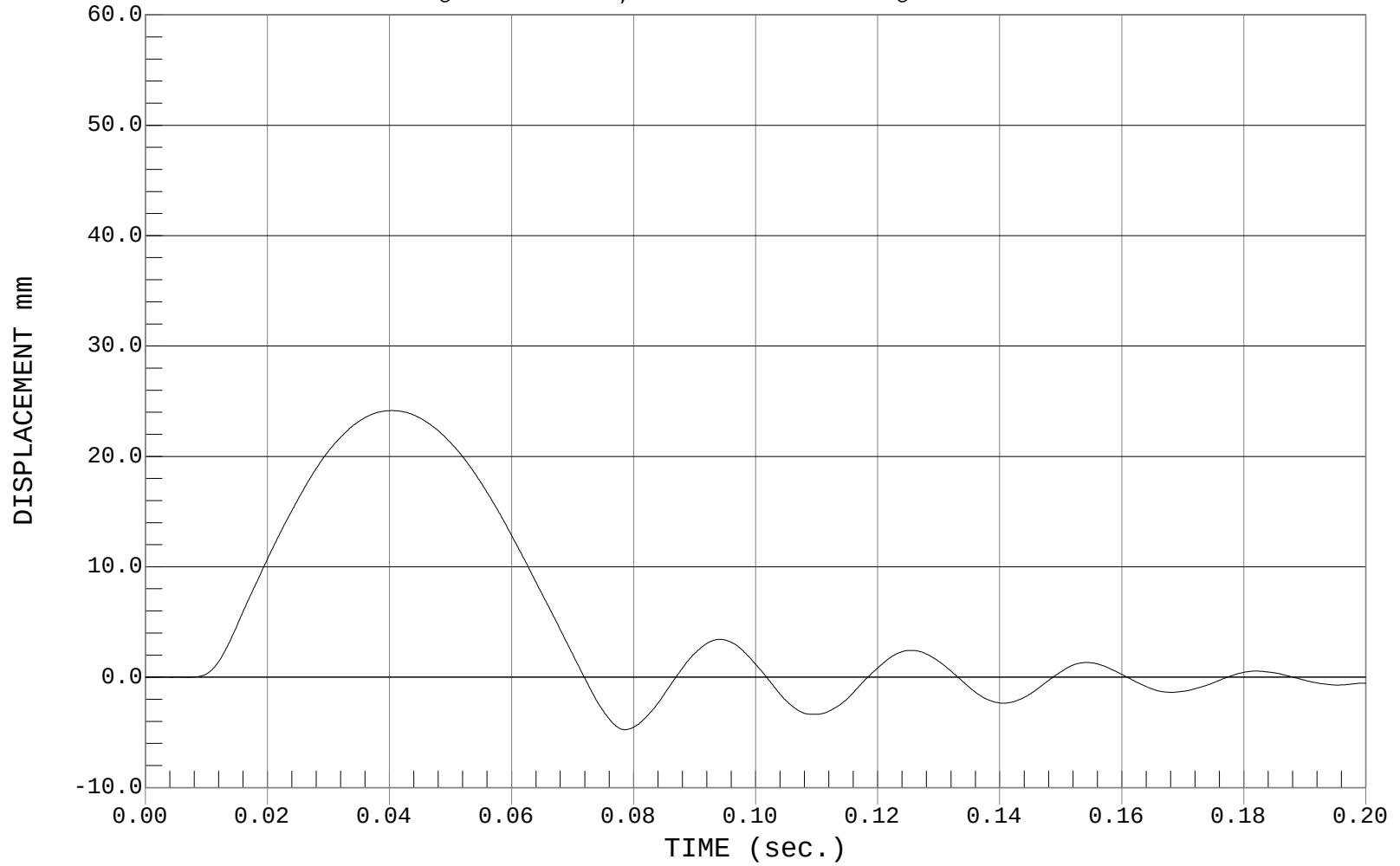
UPPER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-22-01
Speed: 6.56 FT/SEC, 2.00 M/SEC

1 DISPLACEMENT, D01524DF.D05

Ymin = -4.76 mm @ 0.0786 sec., Ymax = 24.15 mm @ 0.0405 sec.





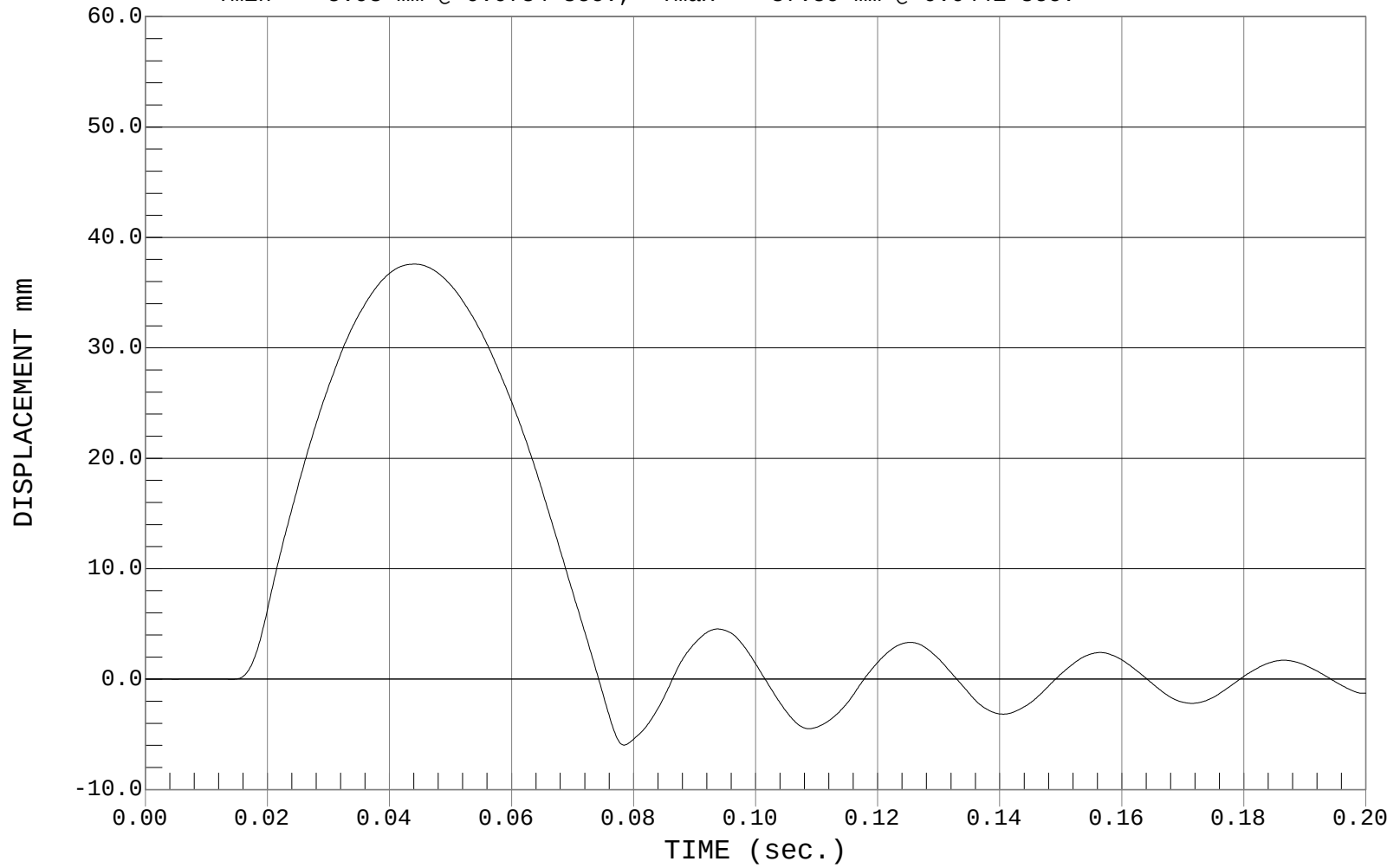
UPPER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-22-01
Speed: 9.84 FT/SEC, 3.00 M/SEC

— 1 DISPLACEMENT, D01524DF.D06

Ymin = -5.98 mm @ 0.0784 sec., Ymax = 37.59 mm @ 0.0441 sec.





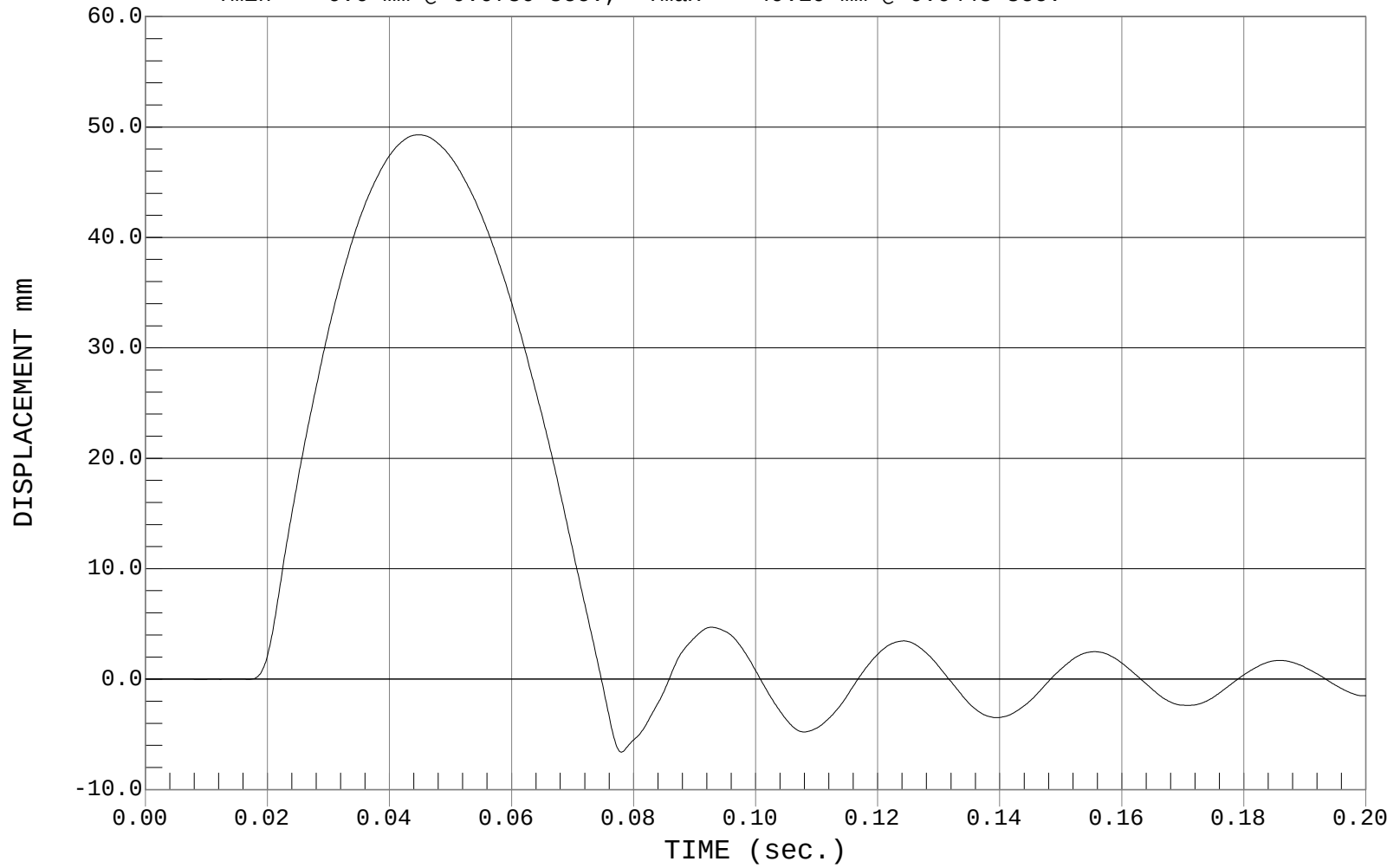
UPPER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-22-01
Speed: 13.12 FT/SEC, 4.00 M/SEC

— 1 DISPLACEMENT, D01524DF.D07

Ymin = -6.6 mm @ 0.0780 sec., Ymax = 49.29 mm @ 0.0448 sec.





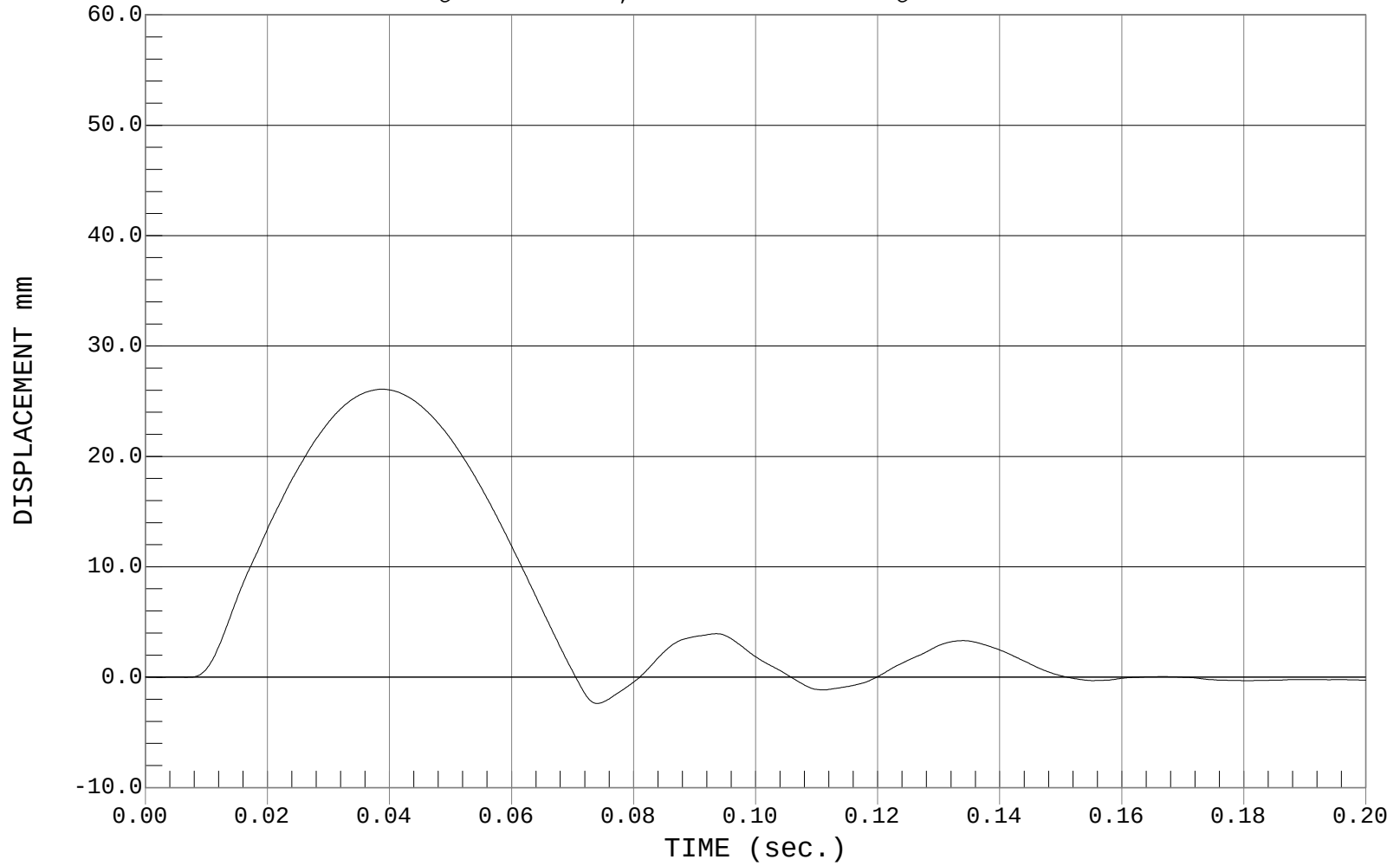
MIDDLE RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-22-01
Speed: 6.56 FT/SEC, 2.00 M/SEC

— 1 DISPLACEMENT, D01525DF.D05

Ymin = -2.38 mm @ 0.0740 sec., Ymax = 26.08 mm @ 0.0387 sec.





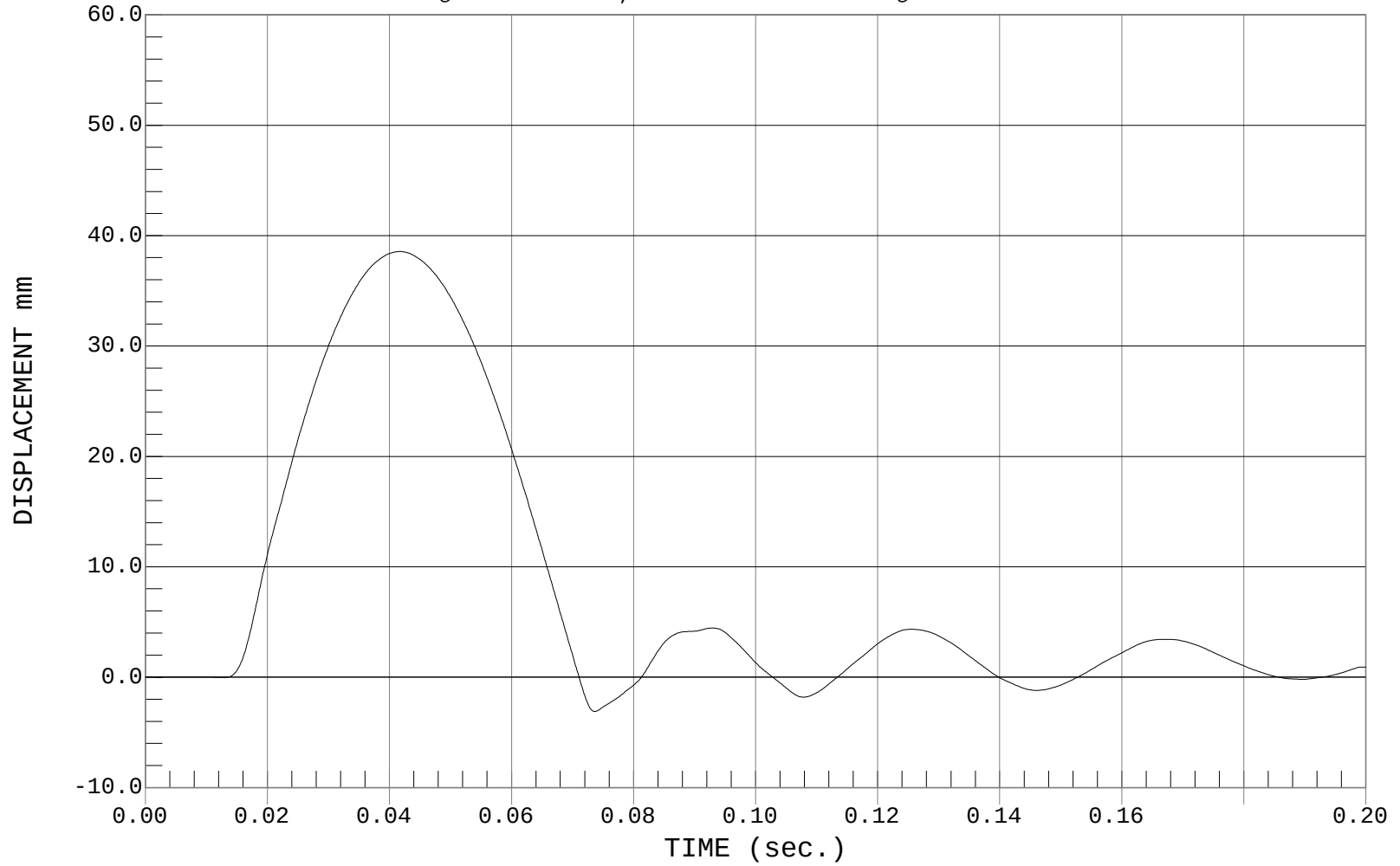
MIDDLE RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-22-01
Speed: 9.84 FT/SEC, 3.00 M/SEC

— 1 DISPLACEMENT, D01525DF.D06

Ymin = -3.11 mm @ 0.0736 sec., Ymax = 38.56 mm @ 0.0417 sec.





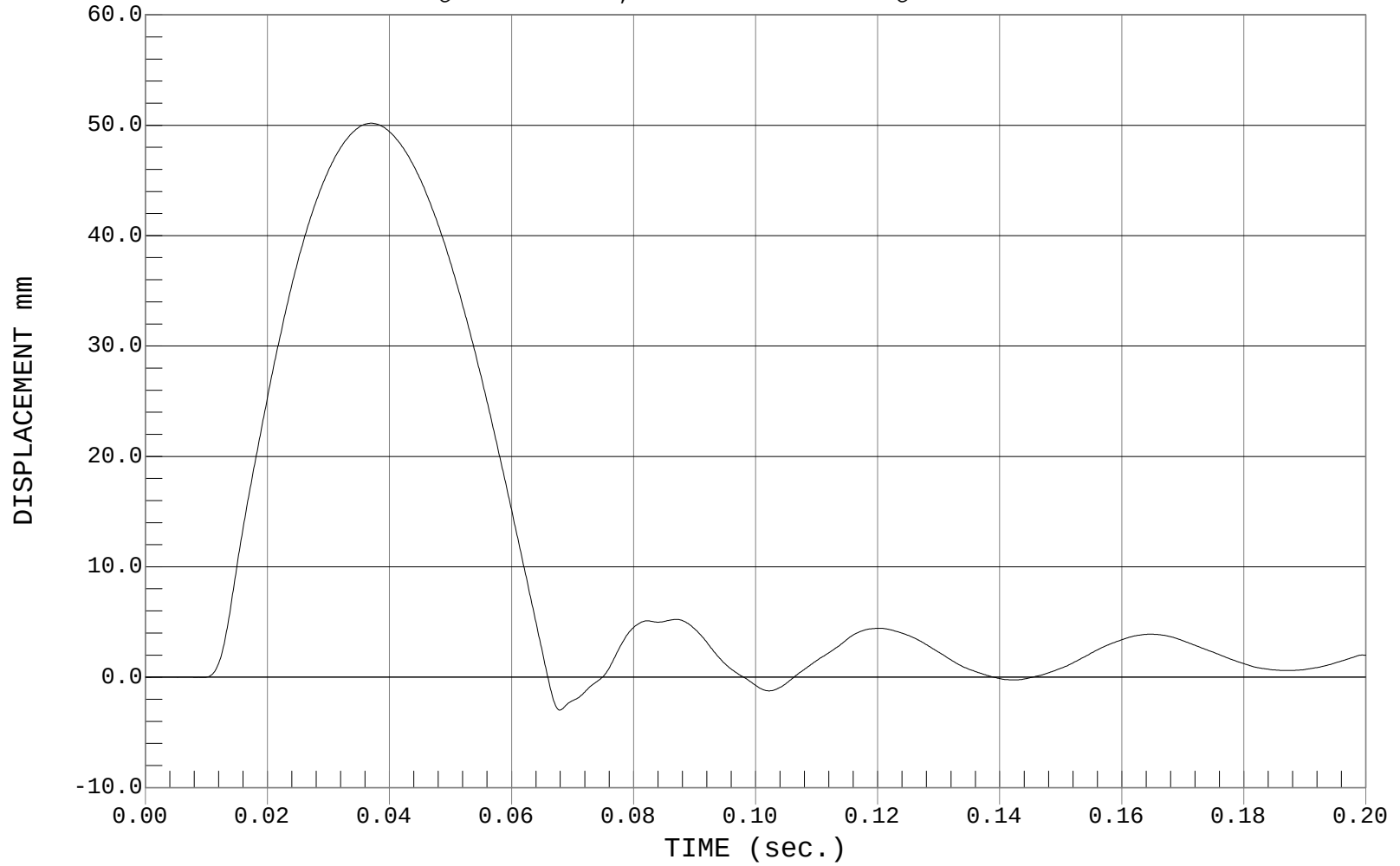
MIDDLE RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-22-01
Speed: 13.12 FT/SEC, 4.00 M/SEC

— 1 DISPLACEMENT, D01525DF.D07

Ymin = -2.98 mm @ 0.0679 sec., Ymax = 50.18 mm @ 0.0370 sec.





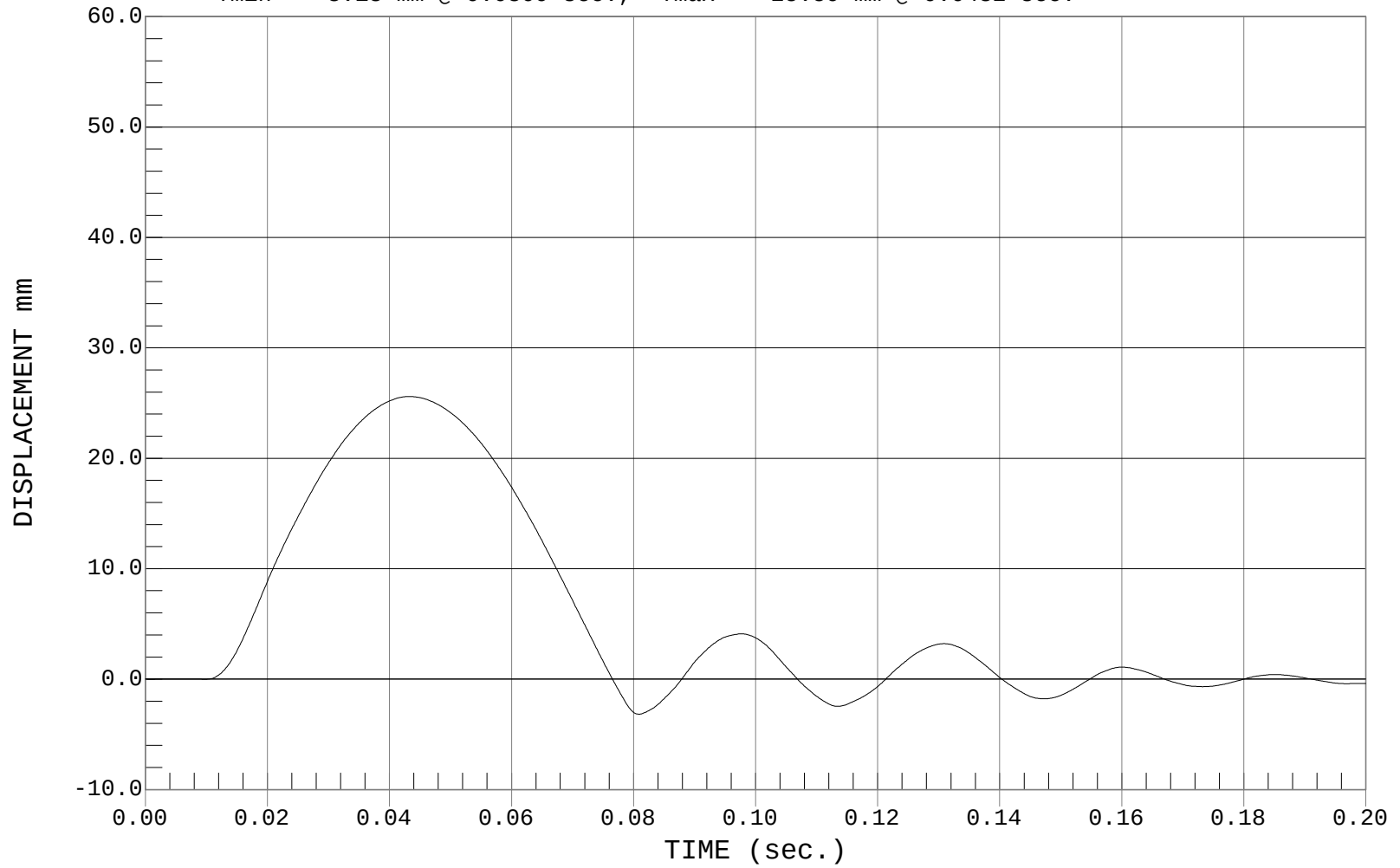
LOWER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-22-01
Speed: 6.56 FT/SEC, 2.00 M/SEC

— 1 DISPLACEMENT, D01526DF.D05

Ymin = -3.18 mm @ 0.0809 sec., Ymax = 25.59 mm @ 0.0432 sec.





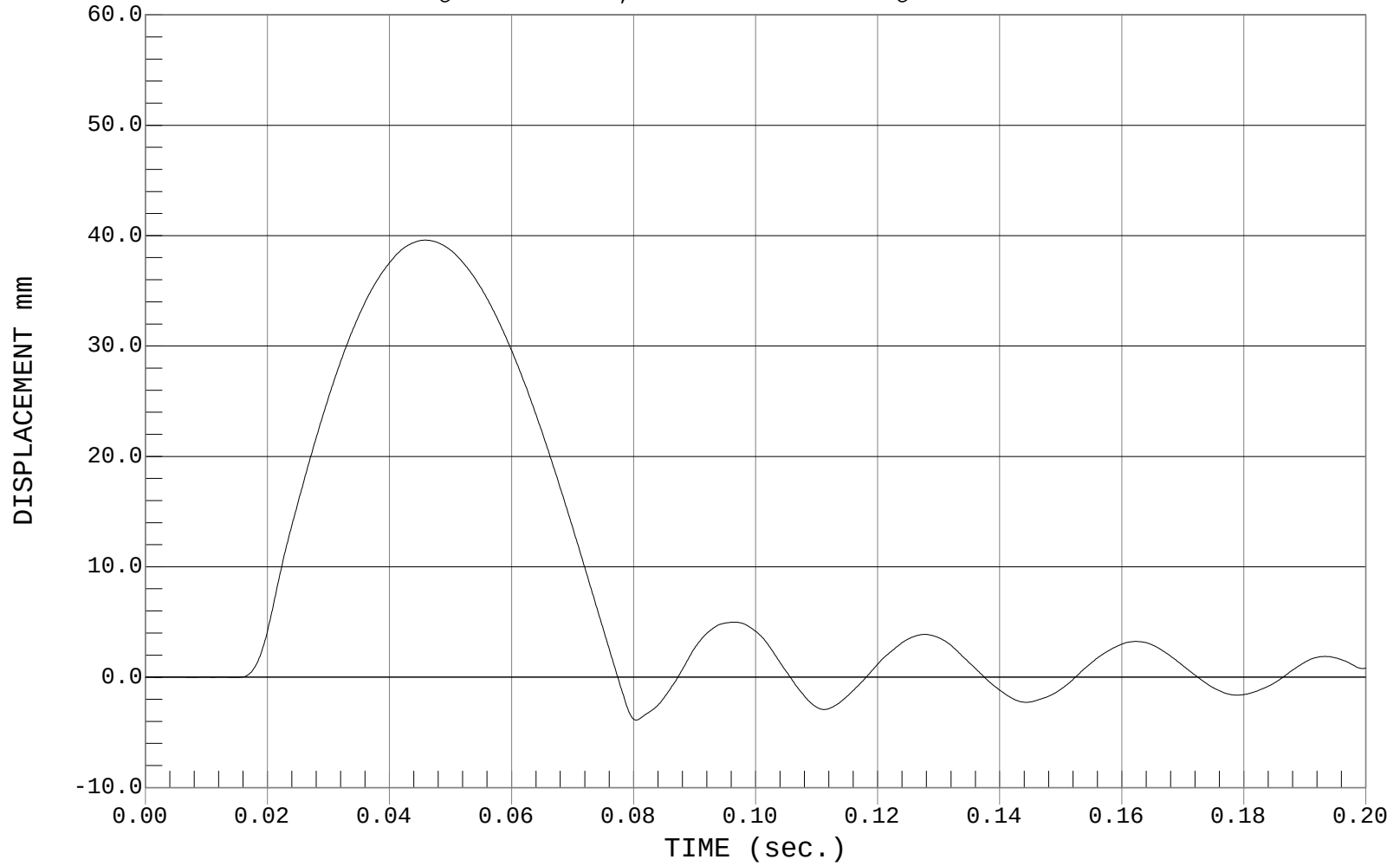
LOWER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-22-01
Speed: 9.84 FT/SEC, 3.00 M/SEC

— 1 DISPLACEMENT, D01526DF.D06

Ymin = -3.89 mm @ 0.0804 sec., Ymax = 39.59 mm @ 0.0459 sec.





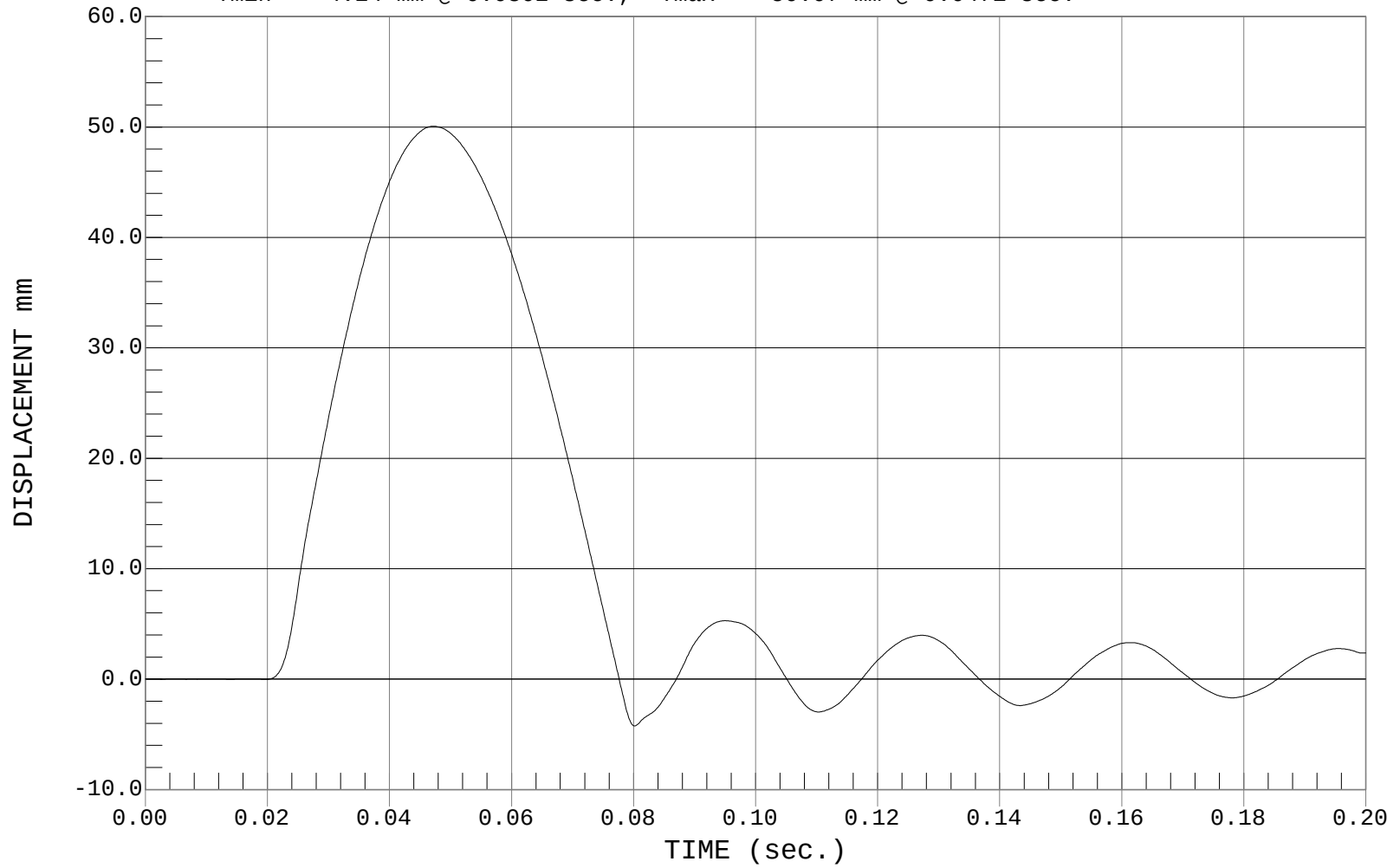
LOWER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-22-01
Speed: 13.12 FT/SEC, 4.00 M/SEC

— 1 DISPLACEMENT, D01526DF.D07

Ymin = -4.24 mm @ 0.0802 sec., Ymax = 50.07 mm @ 0.0471 sec.



MGA RESEARCH CORPORATION
ABDOMEN TEST
EUROSID 2 DUMMY

Date: 10/24/01

Dummy Serial Number: 010

Test Number: D011527

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.0
Relative Humidity (%)	10 – 70	56
Probe Speed (m/s)	3.90 – 4.10	3.99
Maximum Impact Force	4.00 – 4.80 kN	4.77
Time of Maximum Force	10.60 – 13.00 ms	12.70
Maximum Total Abdomen Force	2.20 – 2.70 kN	2.26
Time of Max. Total Force	10.00 – 12.30 ms	11.20

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



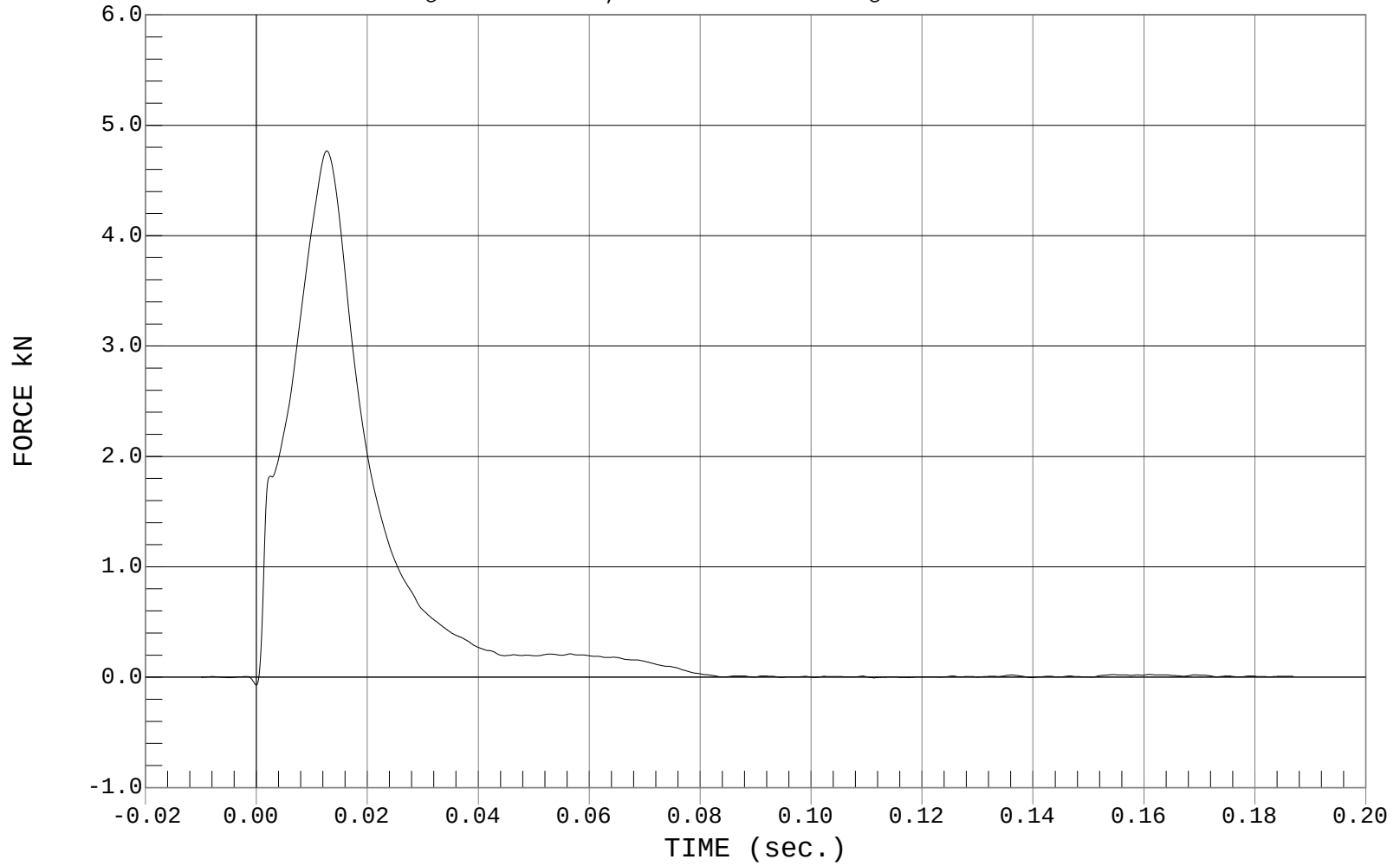
IMPACTOR FORCE

Test Desc.: Dummy Calibration - Abdomen Impact
Component: Dummy #010

Test Date: 10-24-01
Speed: 13.10 FT/SEC, 3.99 M/SEC

— 1 FORCE, D01527FT.F01

Ymin = -.07 kN @ 0.0000 sec., Ymax = 4.77 kN @ 0.0127 sec.





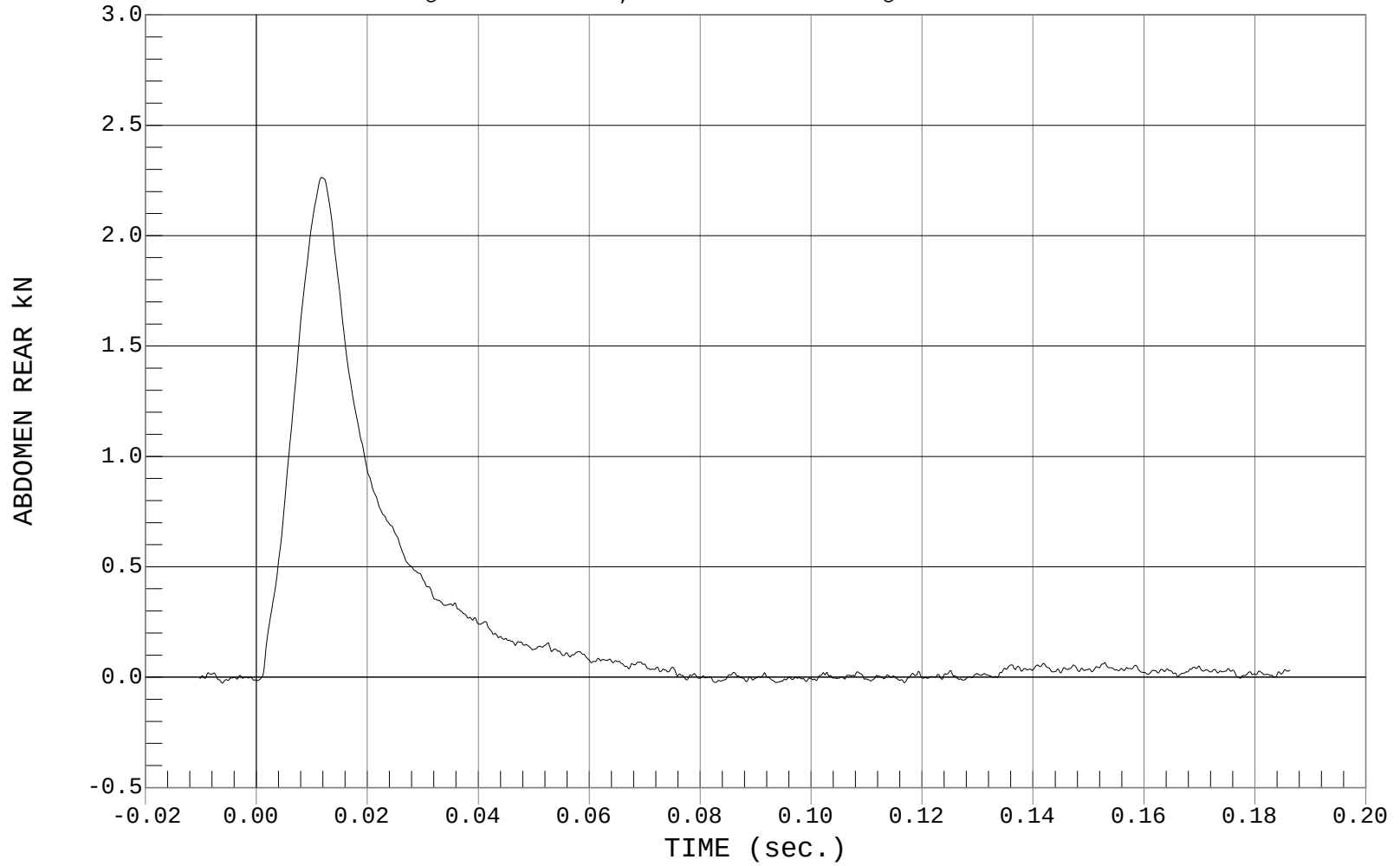
ABDOMEN FORCE

Test Desc.: Dummy Calibration - Abdomen Impact
Component: Dummy #010

Test Date: 10-24-01
Speed: 13.10 FT/SEC, 3.99 M/SEC

— 1 ABDOMEN REAR, D01527FT.F02

Ymin = -.03 kN @ -0.0061 sec., Ymax = 2.26 kN @ 0.0118 sec.



MGA RESEARCH CORPORATION
LUMBAR SPINE TEST
EUROSID 2 DUMMY

Date: 10/24/01
Dummy Serial Number: 010
Test Number: D011528

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.0 – 22.0	21.1
Relative Humidity (%)		10 – 70	58
Pendulum Speed		5.95 – 6.15	5.99
Pendulum Deceleration	10 msec	2.46 - 1.59 m/sec	-1.96
	20 msec	5.25 - 4.07 m/sec	-4.42
	25 msec	6.64 - 5.3 m/sec	-5.52
	30 msec	≥ -6.5 m/sec	-6.07
Maximum Flexion Angle		45.0 – 55.0 deg	52.4
Time of Max. Flexion Angle		39.0 – 53.0 ms	44.6
Maximum Angle Theta (A)		31.0 – 35.0 deg	32.8
Time of Max. Theta (A)		44.0 – 52.0 ms	44.6
Maximum Angle Theta (B)		28.32– 30.74 deg	29.11
Time of Max. Theta (B)		44.0 – 52.0 ms	46.0

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



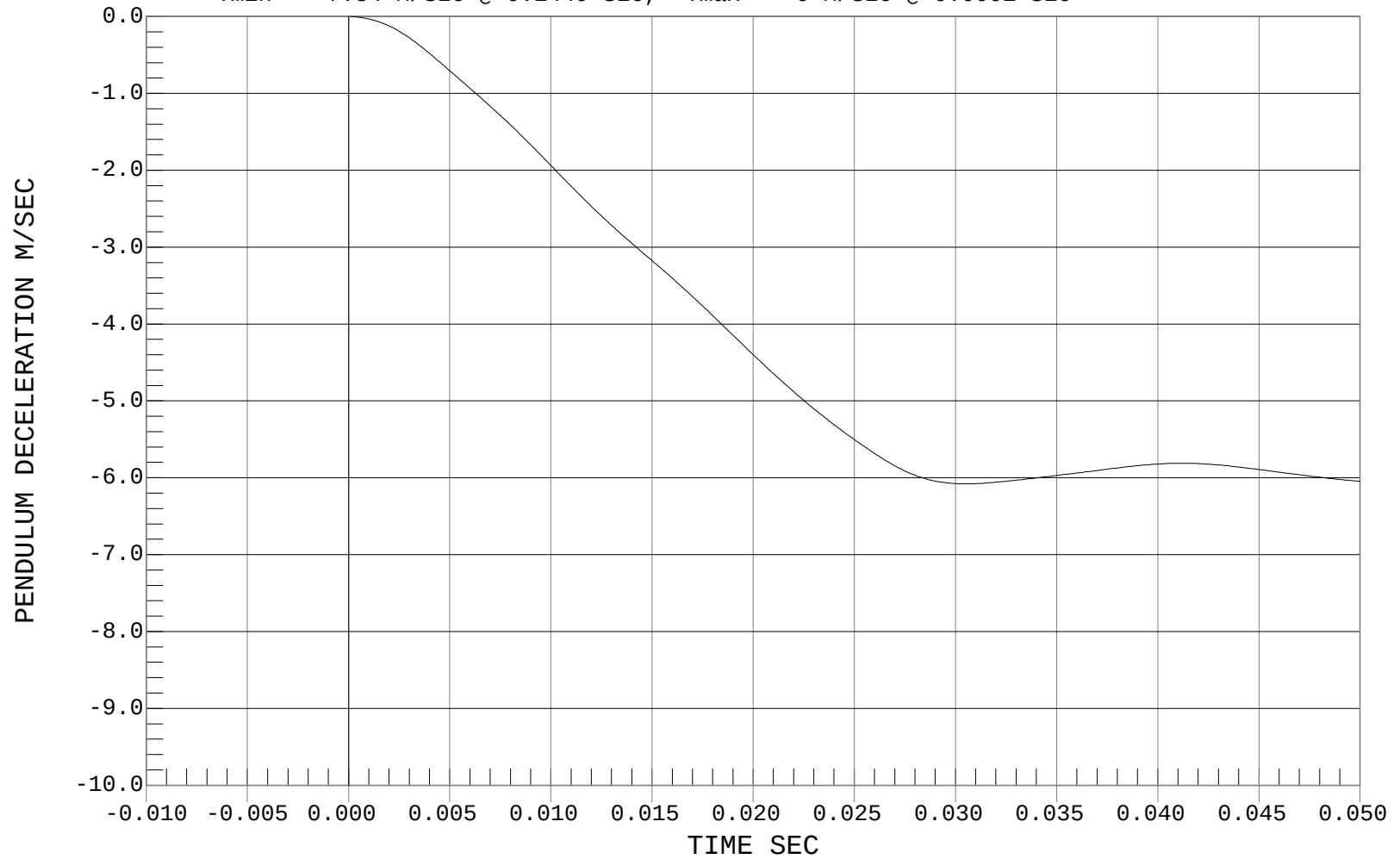
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Lumbar Flexion
Component: Dummy #010

Test Date: 10-24-01
Speed: 19.64 FT/SEC, 5.99 M/SEC

— 1 PENDULUM DECELERATION, D01528AI.V04

Ymin = -7.34 M/SEC @ 0.1449 SEC, Ymax = 0 M/SEC @ 0.0001 SEC





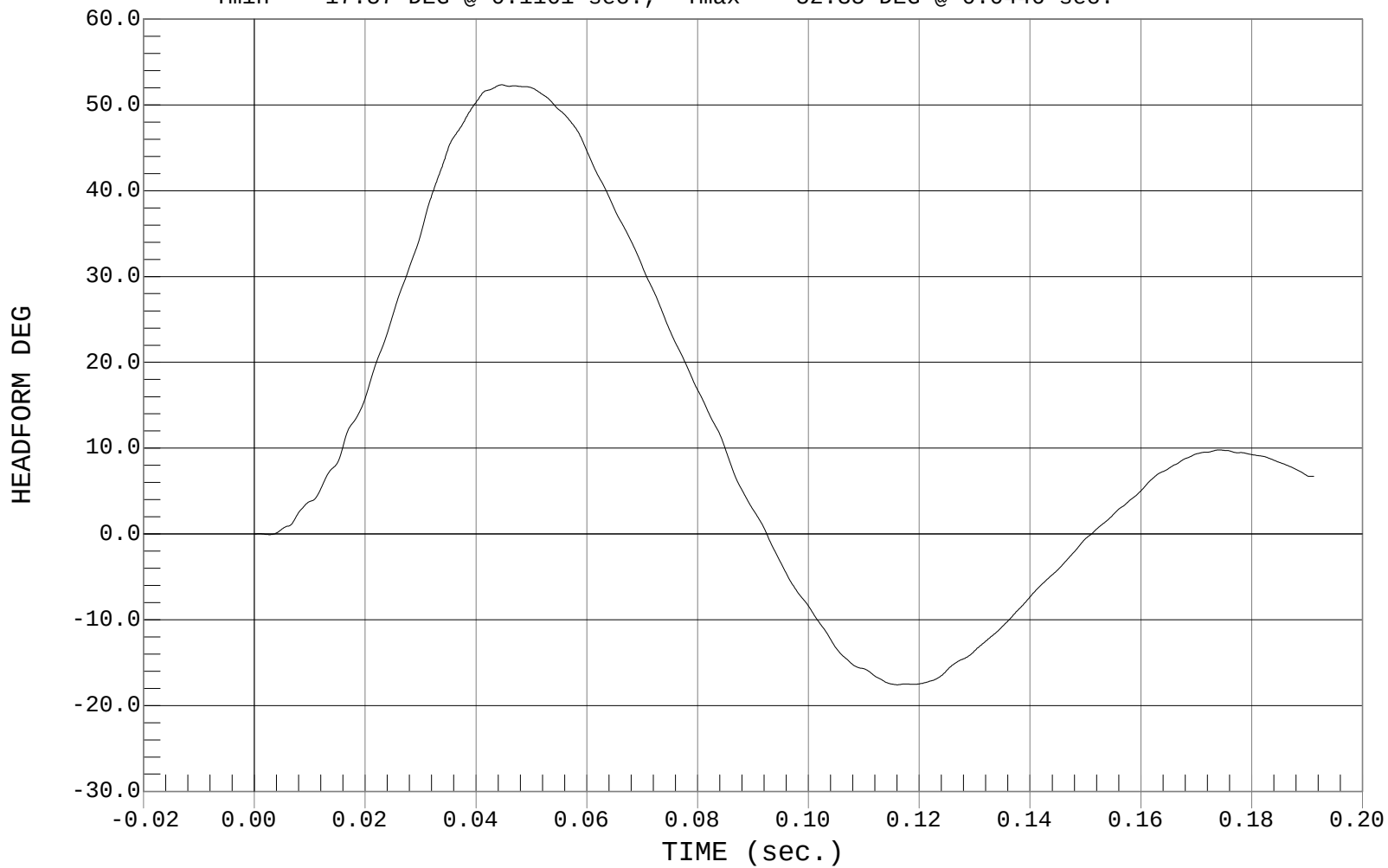
FLEXION ANGLE

Test Desc.: Dummy Calibration - Lumbar Flexion
Component: Dummy #010

Test Date: 10-24-01
Speed: 19.64 FT/SEC, 5.99 M/SEC

— 1 HEADFORM, D01528DT.D08

Ymin = -17.57 DEG @ 0.1161 sec., Ymax = 52.35 DEG @ 0.0446 sec.





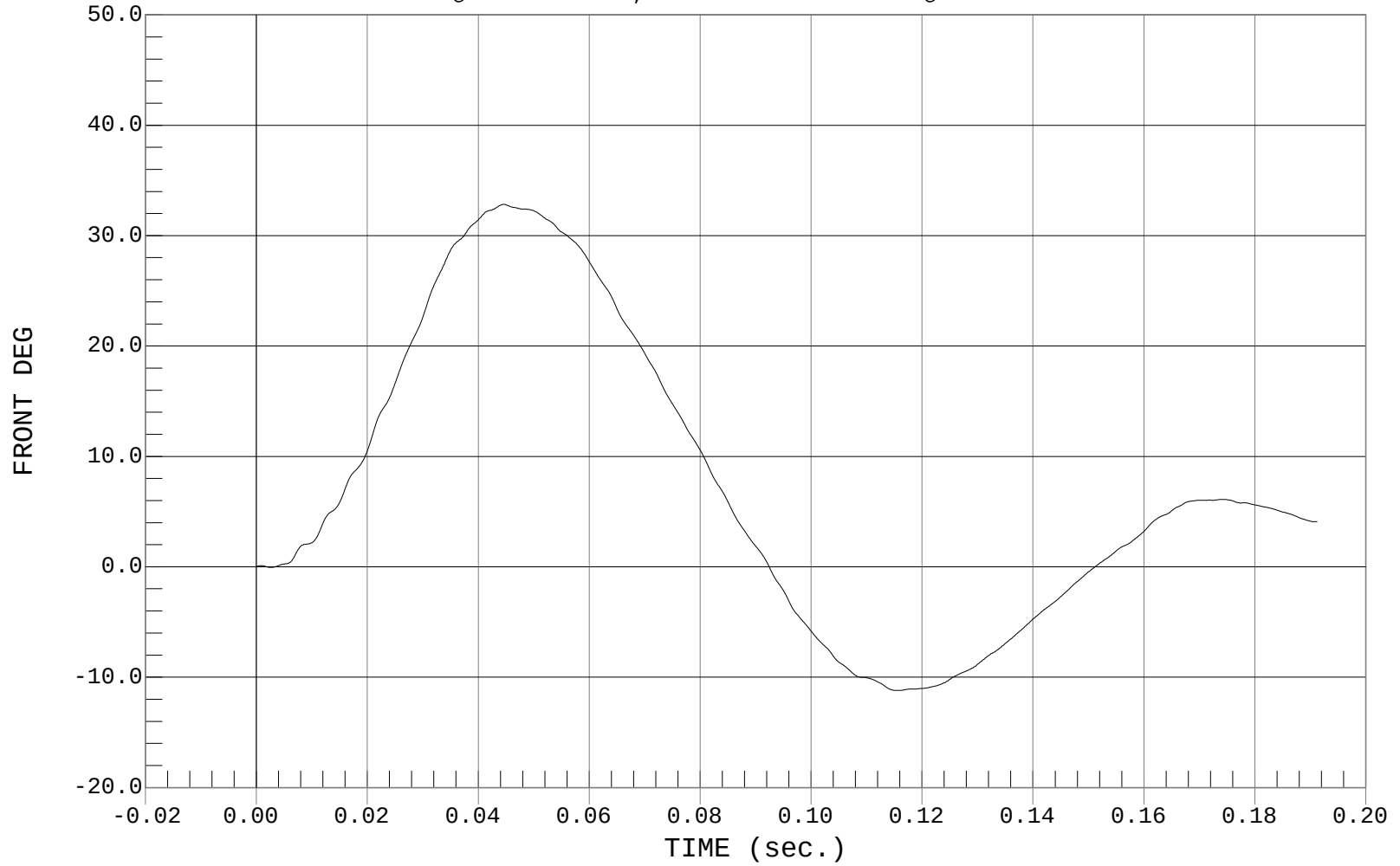
THETA A

Test Desc.: Dummy Calibration - Lumbar Flexion
Component: Dummy #010

Test Date: 10-24-01
Speed: 19.64 FT/SEC, 5.99 M/SEC

— 1 FRONT, D01528DT.D05

Ymin = -11.2 DEG @ 0.1156 sec., Ymax = 32.83 DEG @ 0.0446 sec.





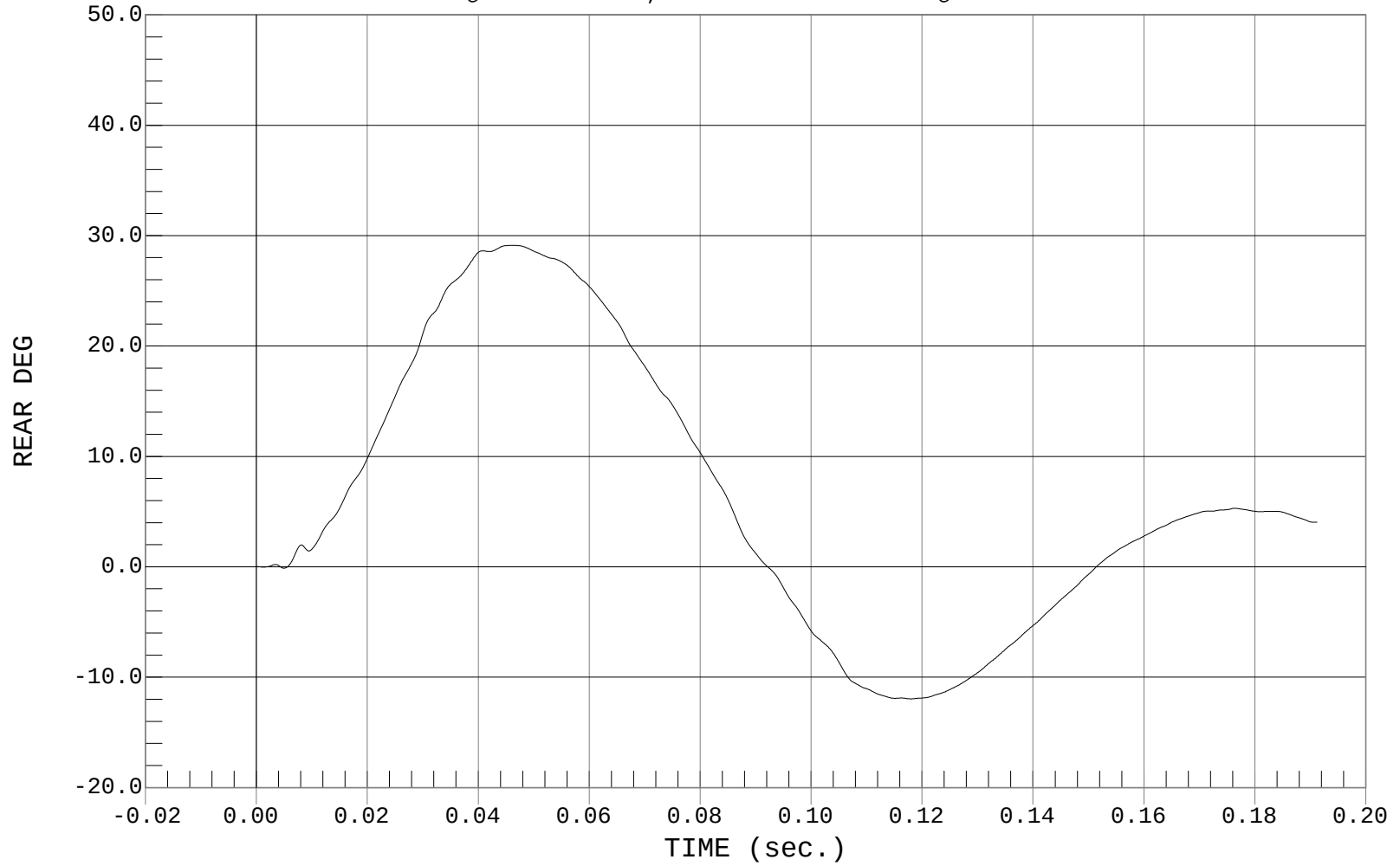
THETA B

Test Desc.: Dummy Calibration - Lumbar Flexion
Component: Dummy #010

Test Date: 10-24-01
Speed: 19.64 FT/SEC, 5.99 M/SEC

— 1 REAR, D01528DT.D06

Ymin = -11.96 DEG @ 0.1180 sec., Ymax = 29.11 DEG @ 0.0460 sec.



MGA RESEARCH CORPORATION
PELVIS TEST
EUROSID 2 DUMMY

Date: 10/24/01

Dummy Serial Number: 010

Test Number: D011529

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.0
Relative Humidity (%)	10 – 70	56
Pendulum Speed	6.20 – 6.30 m/s	6.24
Maximum Impactor Force	9.80 – 12.20 kN	11.10
Time of Max. Impactor Force	9.50 – 12.50 ms	11.20
Maximum Pubic Force	2.65 – 3.35 kN	3.34
Time of Max. Pubic Force	10.00 – 13.00 ms	11.60

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



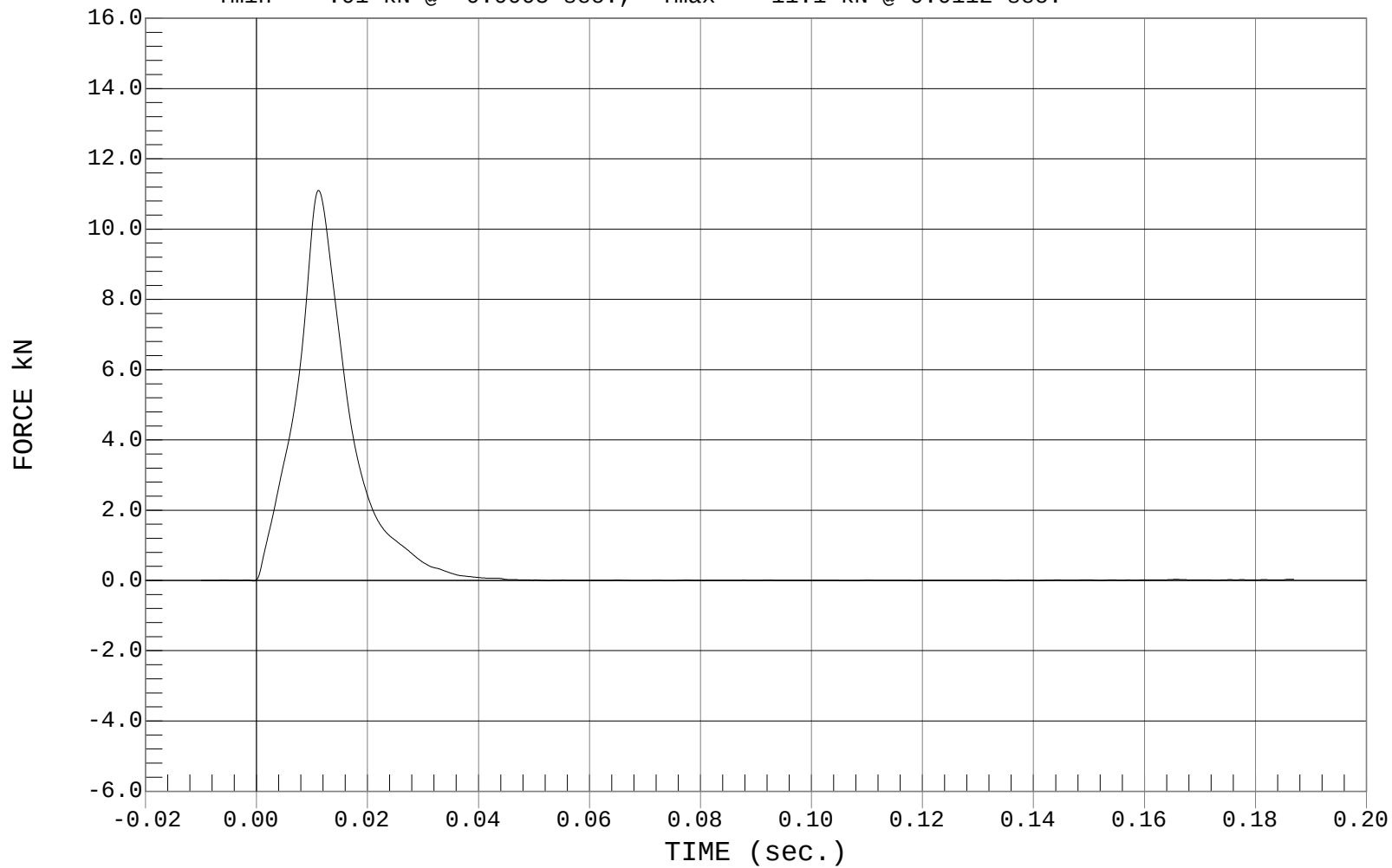
IMPACTOR FORCE

Test Desc.: Dummy Calibration - Pelvis Impact
Component: Dummy #010

Test Date: 10-24-01
Speed: 20.47 FT/SEC, 6.24 M/SEC

— 1 FORCE, D01529FT.F01

Ymin = -.01 kN @ -0.0005 sec., Ymax = 11.1 kN @ 0.0112 sec.





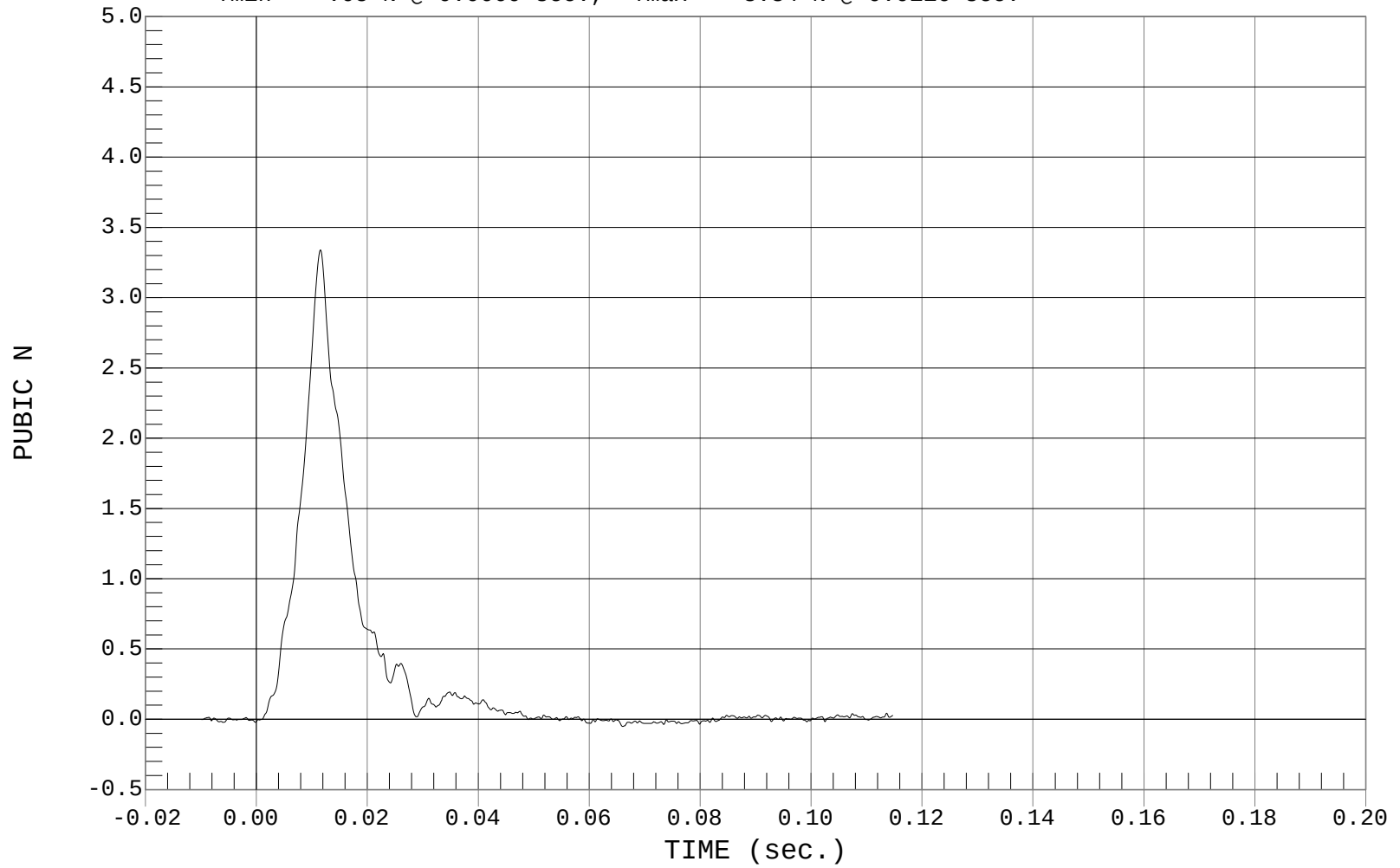
PUBIC FORCE

Test Desc.: Dummy Calibration - Pelvis Impact
Component: Dummy #010

Test Date: 10-24-01
Speed: 20.47 FT/SEC, 6.24 M/SEC

— 1 PUBIC, D01529FT.F02

Ymin = -.05 N @ 0.0660 sec., Ymax = 3.34 N @ 0.0116 sec.



CERTIFICATION DATA

Dummy Serial Number: 009

Calibration Test Results Summary

Dummy Serial Number: 009

Post-Test Calibration

Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all impact test requirements.
Shoulder Impact Test:	The shoulder passed all impact test requirements.
Rib Tests:	All ribs passed all impact test requirements.
Abdomen Test:	The abdomen passed all impact test requirements.
Lumbar Spine Test:	The lumbar spine passed all impact test requirements.
Pelvis Test:	The pelvis passed all impact test requirements.

MGA RESEARCH CORPORATION
HEAD DROP TEST
EUROSID 2 DUMMY

Date: 10/29/01

Dummy Serial Number: 009

Test Number: D011591

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.8
Relative Humidity (%)	10 – 70	35
Peak Resultant Acceleration	100 – 150 g's	138
Time of Max. Res. Acceleration		24.1 msec

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



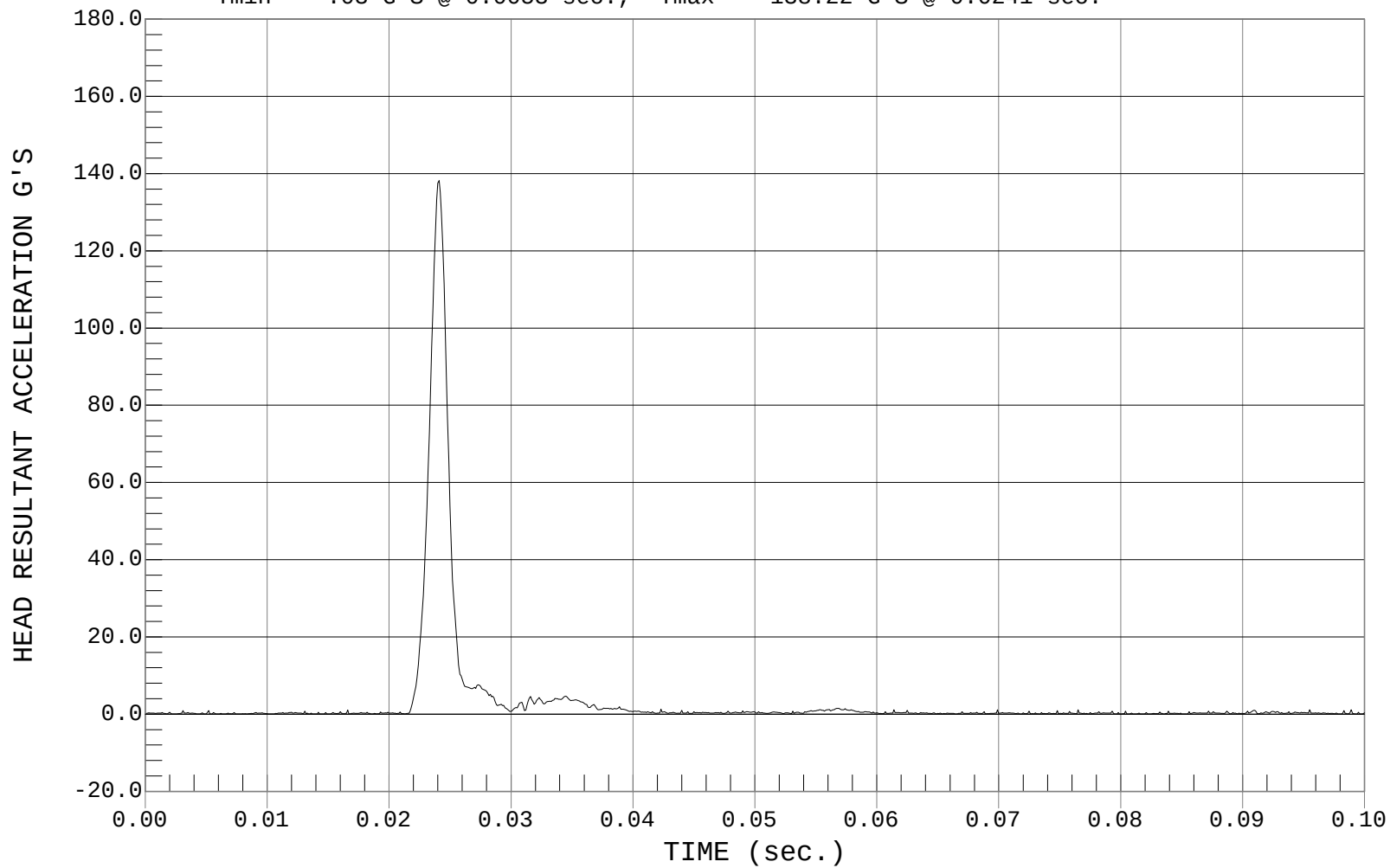
PEAK RESULTANT ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #009

Test Date: 10-29-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

— 1 HEAD RESULTANT ACCELERATION, D01591AV.A01

Ymin = .03 G'S @ 0.0053 sec., Ymax = 138.22 G'S @ 0.0241 sec.



MGA RESEARCH CORPORATION
NECK PENDULUM TEST
EUROSID 2 DUMMY

Date: 10/29/01

Dummy Serial Number: 009

Test Number: D011592

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.0 – 22.0	21.9
Relative Humidity (%)		10 – 70	34
Pendulum Speed		3.3 - 3.5	3.4
Pendulum Deceleration	3 msec	ˆ.25 - ˆ.53 m/sec	-.35
	8 msec	ˆ1.59 - ˆ2.04 m/sec	-1.71
	14 msec	ˆ3.20 - ˆ3.85 m/sec	-3.34
Maximum Flexion Angle		49.0 – 59.0 deg	55.9
Time of Max. Flexion Angle		54.0 – 66.0 ms	57.7
Maximum Angle Theta (A)		32.0 – 37.0 deg	34.1
Time of Max. Theta (A)		53.0 – 63.0 ms	57.4
Maximum Angle Theta (B)		29.37 – 31.87 deg	30.16
Time of Max. Theta (B)		54.0 – 64.0 ms	57.6

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



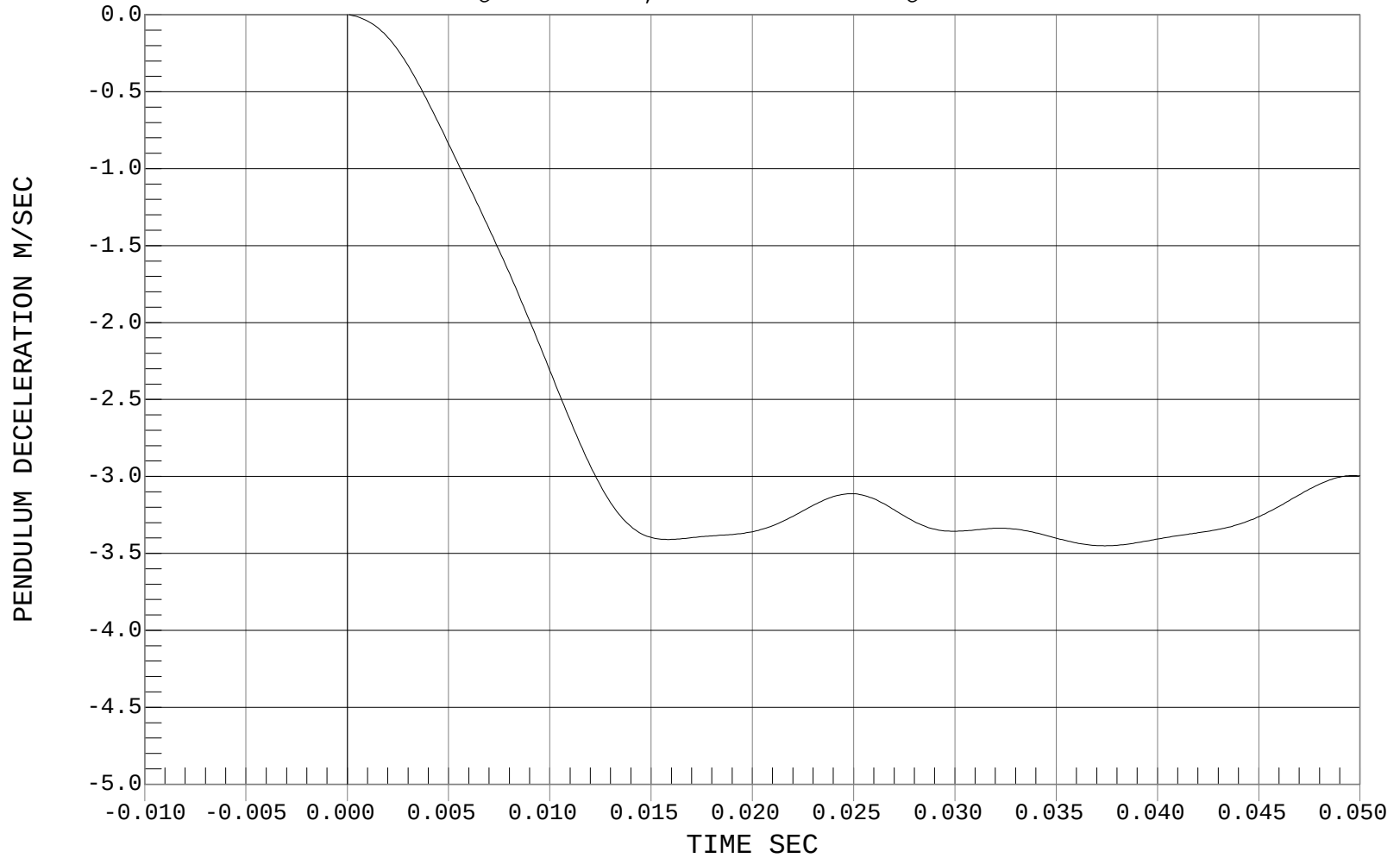
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #009

Test Date: 10-29-01
Speed: 11.11 FT/SEC, 3.39 M/SEC

— 1 PENDULUM DECELERATION, D01592AI.V04

Ymin = -4.26 M/SEC @ 0.01903 SEC, Ymax = 0 M/SEC @ 0.0001 SEC





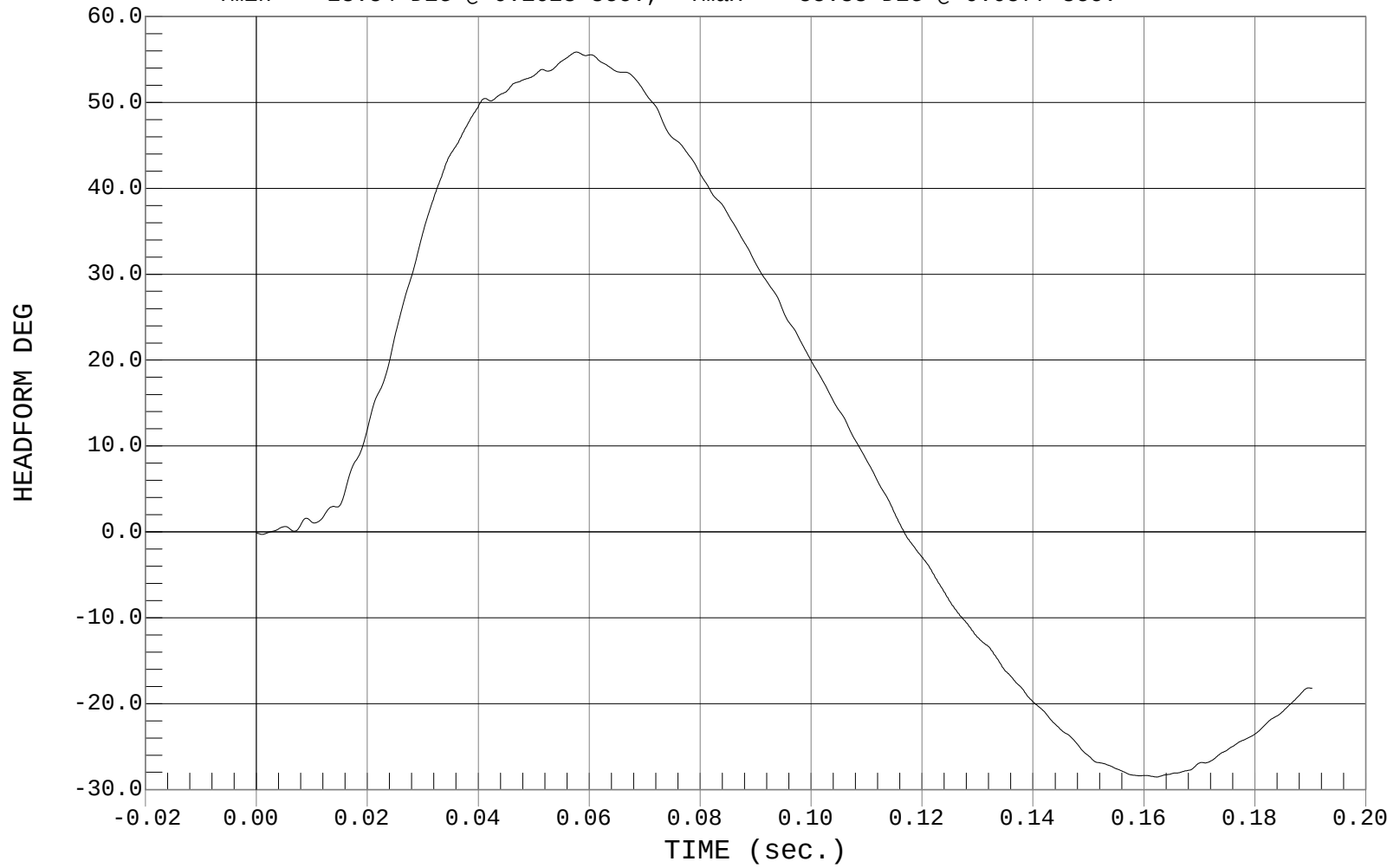
FLEXION ANGLE

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #009

Test Date: 10-29-01
Speed: 11.11 FT/SEC, 3.39 M/SEC

— 1 HEADFORM, D01592DT.D08

Ymin = -28.54 DEG @ 0.1623 sec., Ymax = 55.88 DEG @ 0.0577 sec.





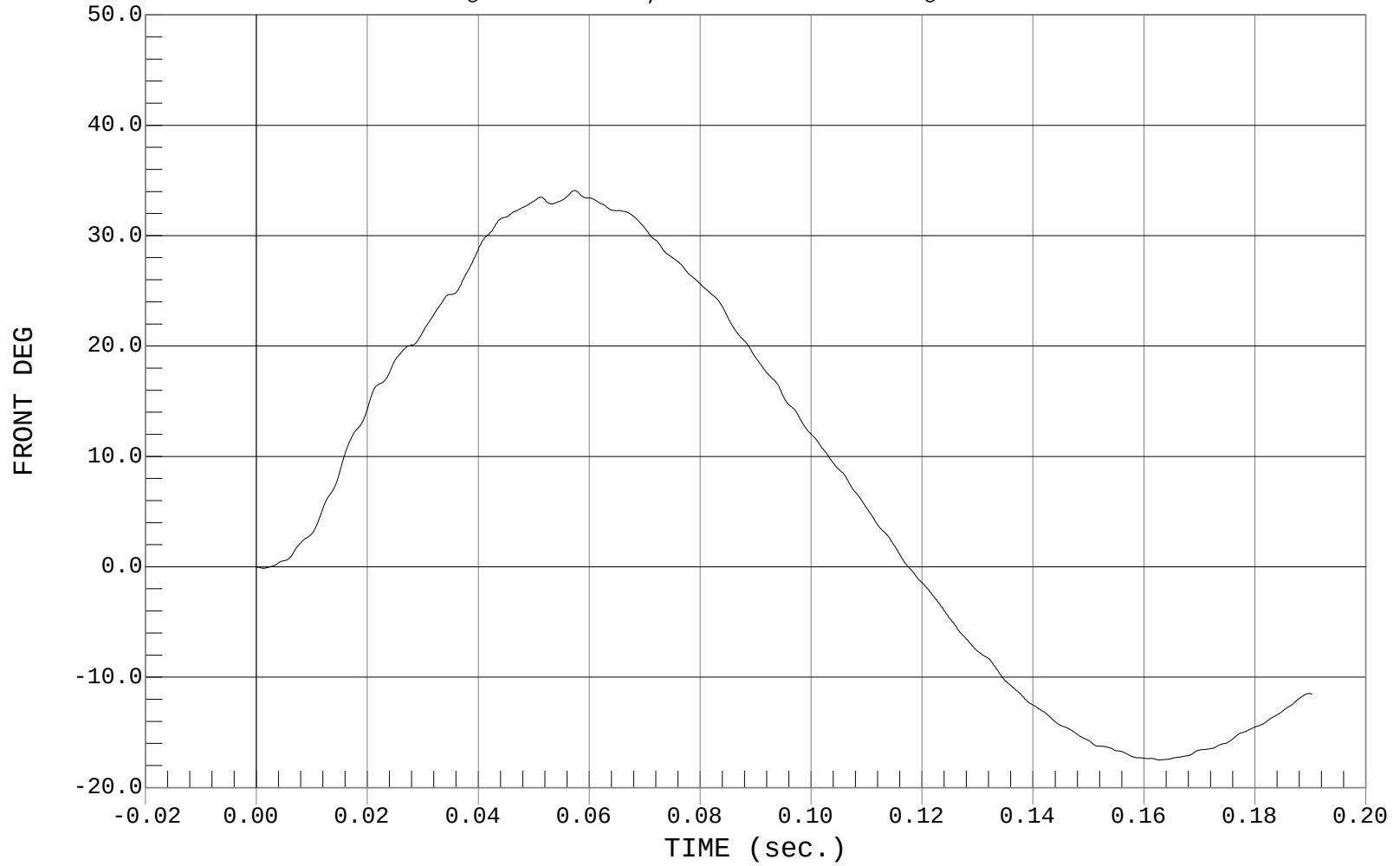
THETA A

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #009

Test Date: 10-29-01
Speed: 11.11 FT/SEC, 3.39 M/SEC

— 1 FRONT, D01592DT.D05

Ymin = -17.49 DEG @ 0.1627 sec., Ymax = 34.1 DEG @ 0.0574 sec.





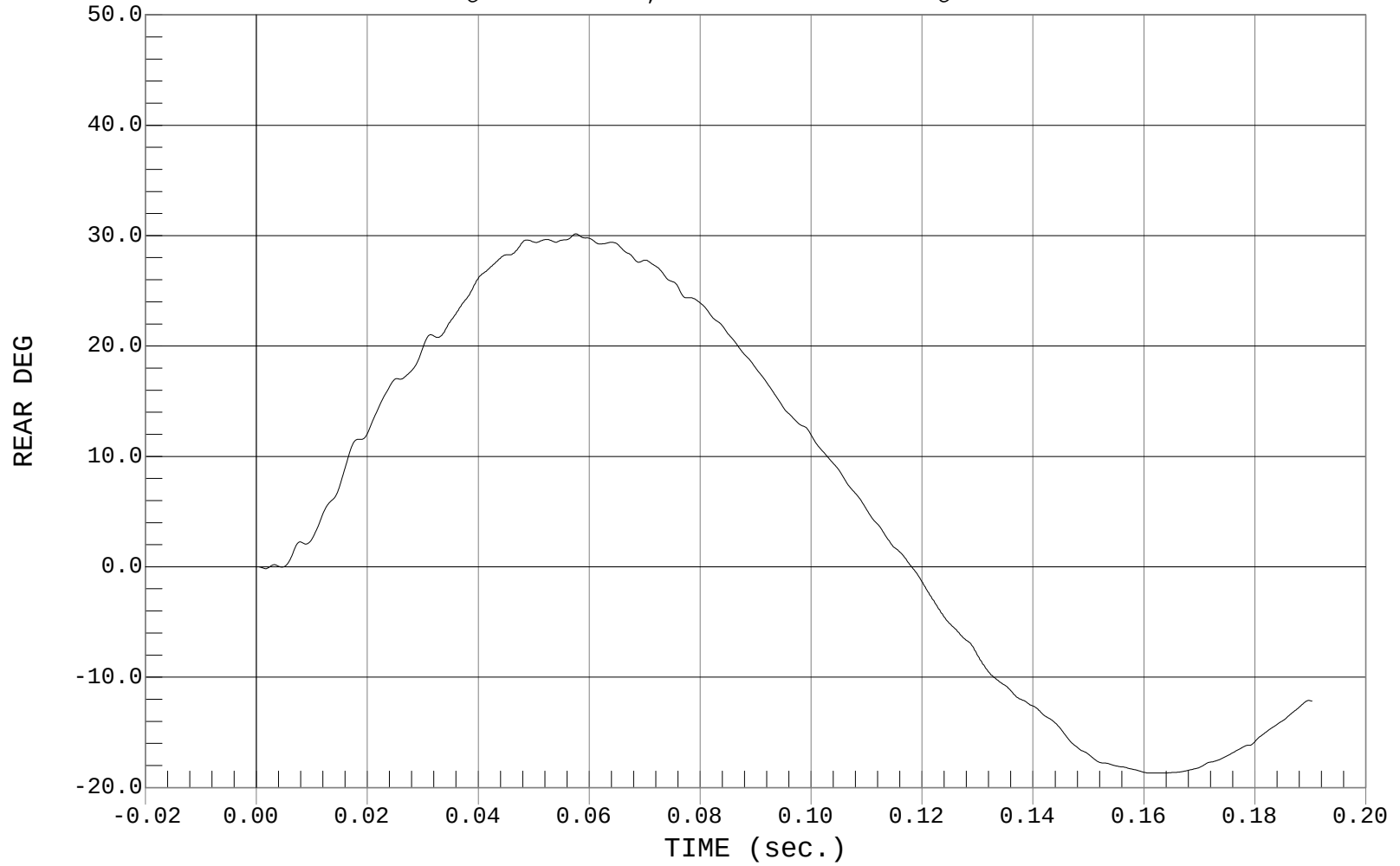
THETA B

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #009

Test Date: 10-29-01
Speed: 11.11 FT/SEC, 3.39 M/SEC

— 1 REAR, D01592DT.D06

Ymin = -18.69 DEG @ 0.1619 sec., Ymax = 30.16 DEG @ 0.0576 sec.



MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
EUROSID 2 DUMMY

Date: 10/29/01

Dummy Serial Number: 009

Test Number: D011593

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.2
Relative Humidity (%)	10 – 70	40
Pendulum Speed	4.2 – 4.4 m/s	4.3
Max. Resultant Acceleration	7.5 – 10.5 g's	9.5
Time of Max. Pendulum Acceleration		23.5 msec

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



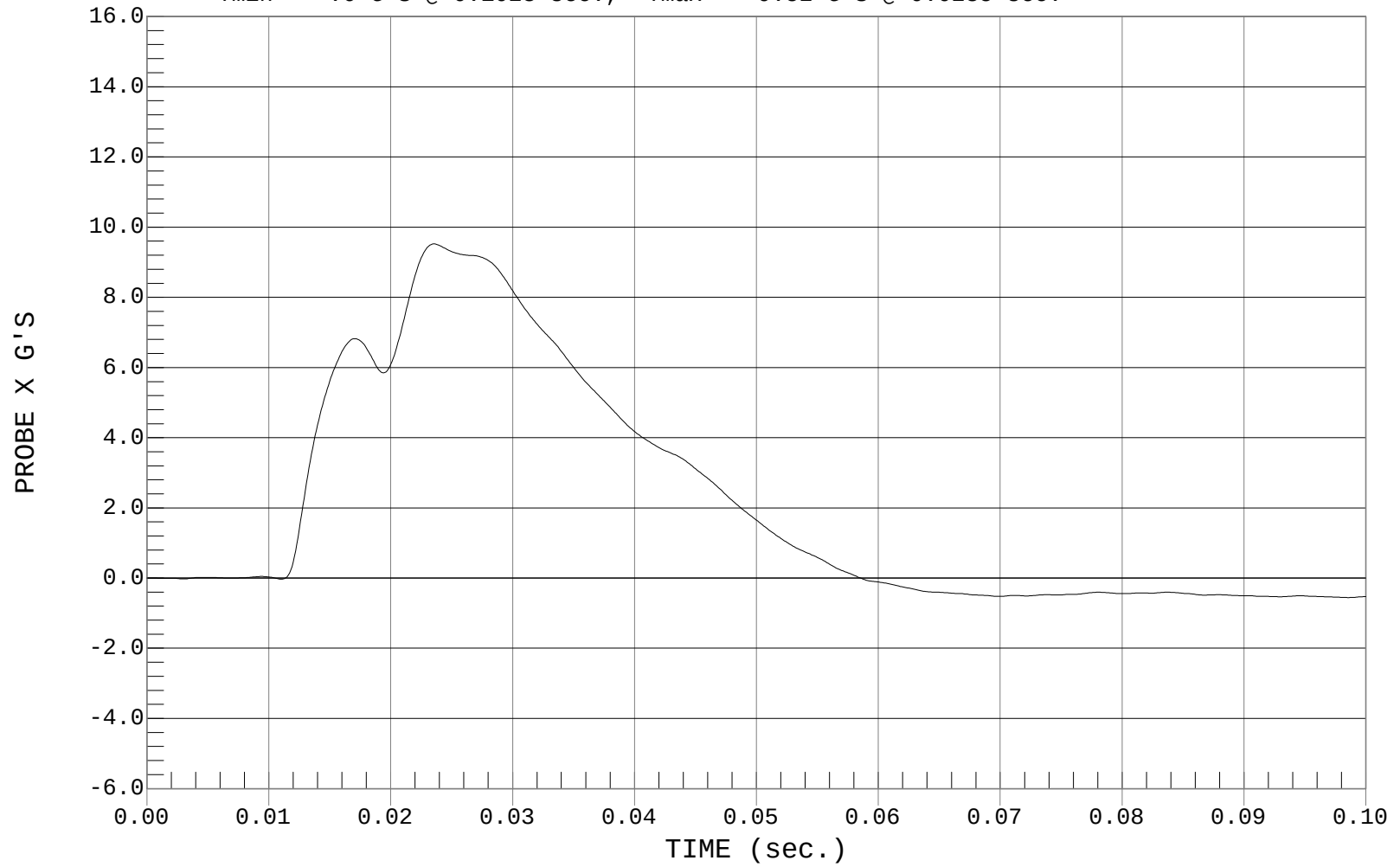
SHOULDER ACCELERATION

Test Desc.: Dummy Calibration - Shoulder Impact
Component: Dummy #009

Test Date: 10-29-01
Speed: 14.16 FT/SEC, 4.32 M/SEC

— 1 PROBE X, D01593AF.A01

Ymin = -0.6 G'S @ 0.1023 sec., Ymax = 9.52 G'S @ 0.0235 sec.



MGA RESEARCH CORPORATION
UPPER/MIDDLE/LOWER RIB TESTS
SIDE IMPACT DUMMY (SID)

Date: 10/26/01
Dummy Serial Number: 009
Test Number: D011594/5/6

UPPER RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.6
Relative Humidity (%)	10 – 70	37
Displacement at 2 m/s	23.5 – 27.5 mm	25.8
Displacement at 3 m/s	36.0 – 40.0 mm	38.1
Displacement at 4 m/s	46.0 – 51.0 mm	49.2

MIDDLE RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.6
Relative Humidity (%)	10 – 70	37
Displacement at 2 m/s	23.5 – 27.5 mm	25.7
Displacement at 3 m/s	36.0 – 40.0 mm	39.3
Displacement at 4 m/s	46.0 – 51.0 mm	50.8

LOWER RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.6
Relative Humidity (%)	10 – 70	37
Displacement at 2 m/s	23.5 – 27.5 mm	25.5
Displacement at 3 m/s	36.0 – 40.0 mm	38.1
Displacement at 4 m/s	46.0 – 51.0 mm	49.2

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



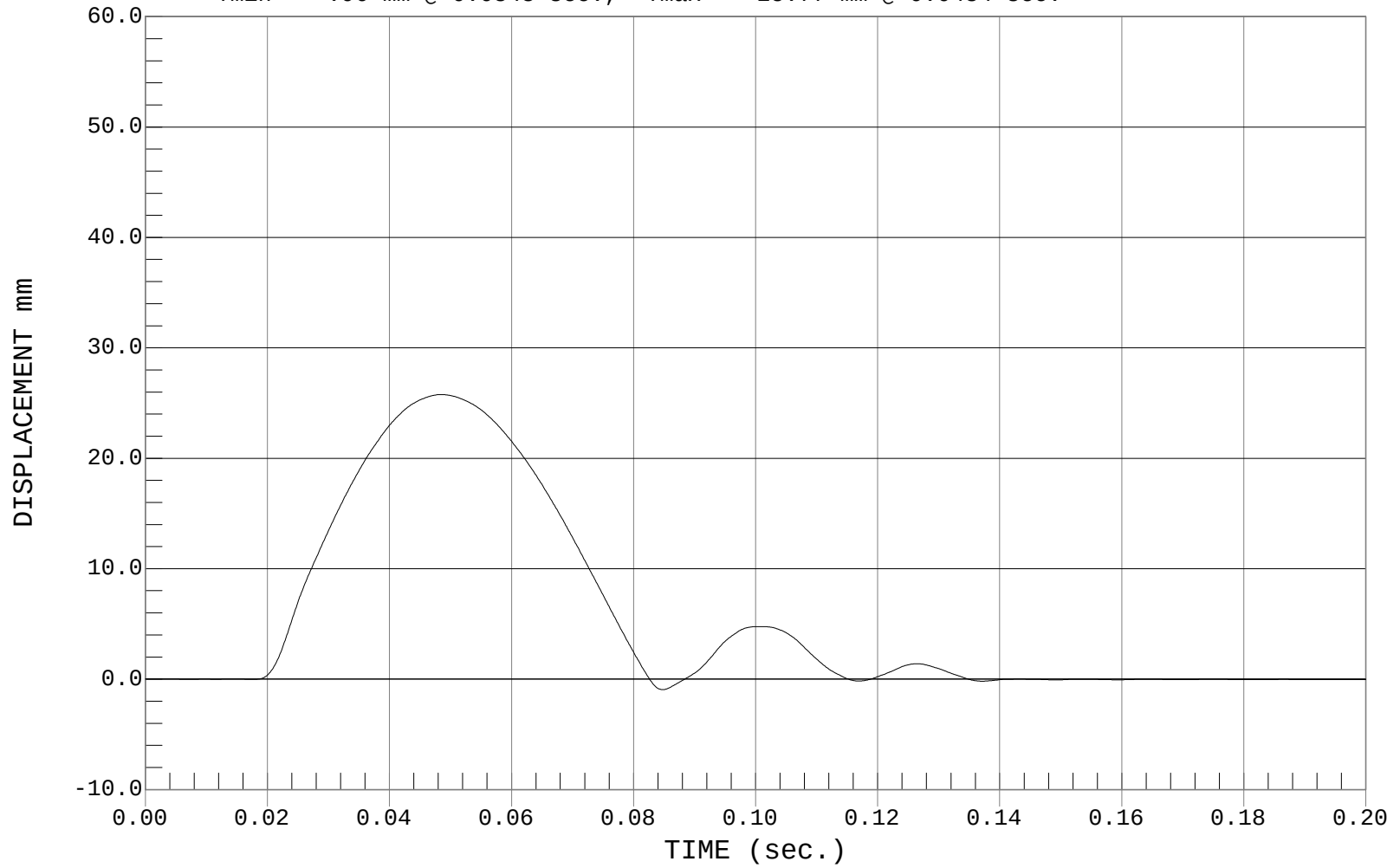
UPPER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #009

Test Date: 10-26-01
Speed: 6.56 FT/SEC, 2.00 M/SEC

1 DISPLACEMENT, D01594DF.D05

Ymin = -.96 mm @ 0.0848 sec., Ymax = 25.77 mm @ 0.0484 sec.





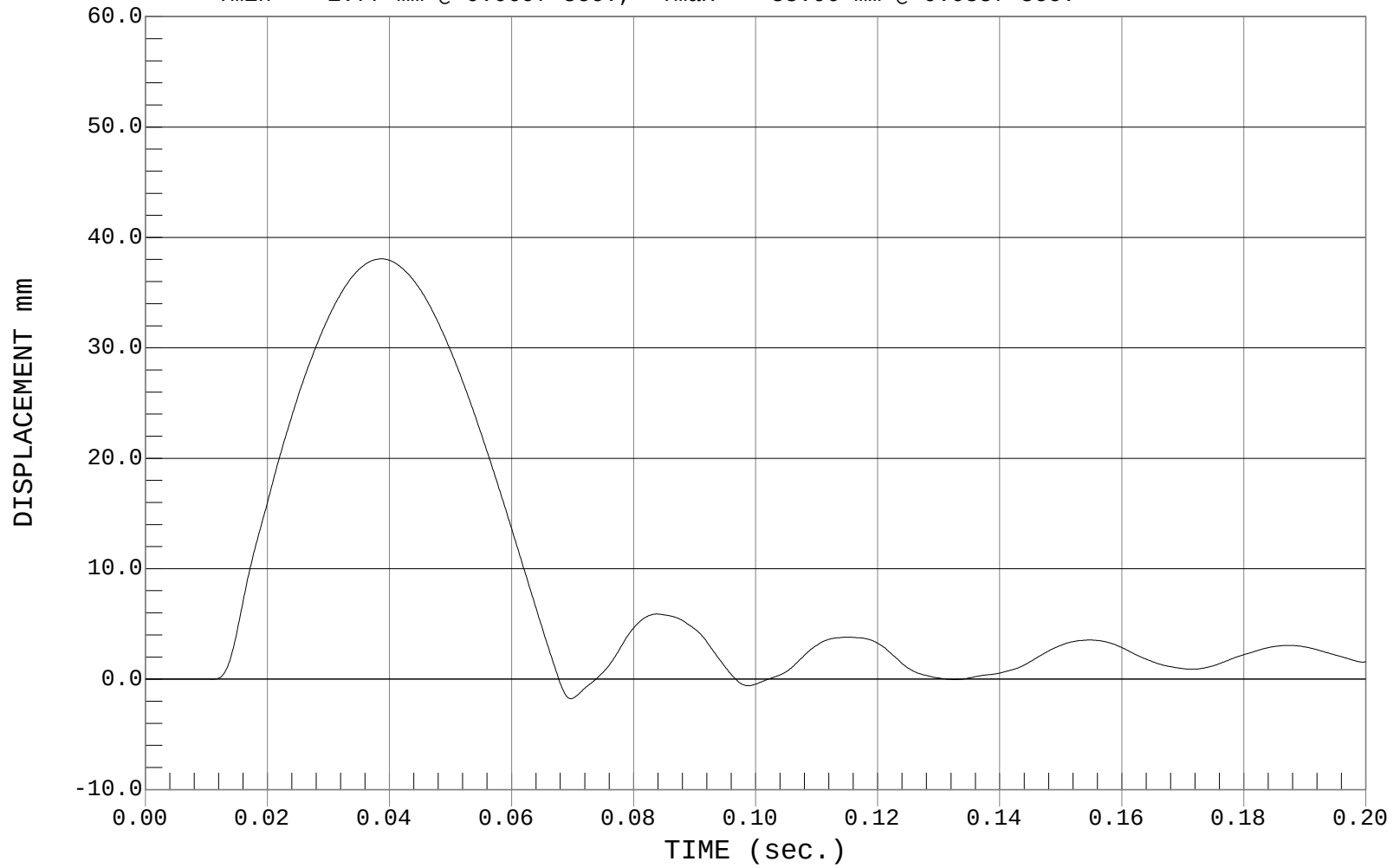
UPPER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #009

Test Date: 10-26-01
Speed: 9.84 FT/SEC, 3.00 M/SEC

— 1 DISPLACEMENT, D01594DF.D06

Ymin = -1.77 mm @ 0.0697 sec., Ymax = 38.06 mm @ 0.0387 sec.





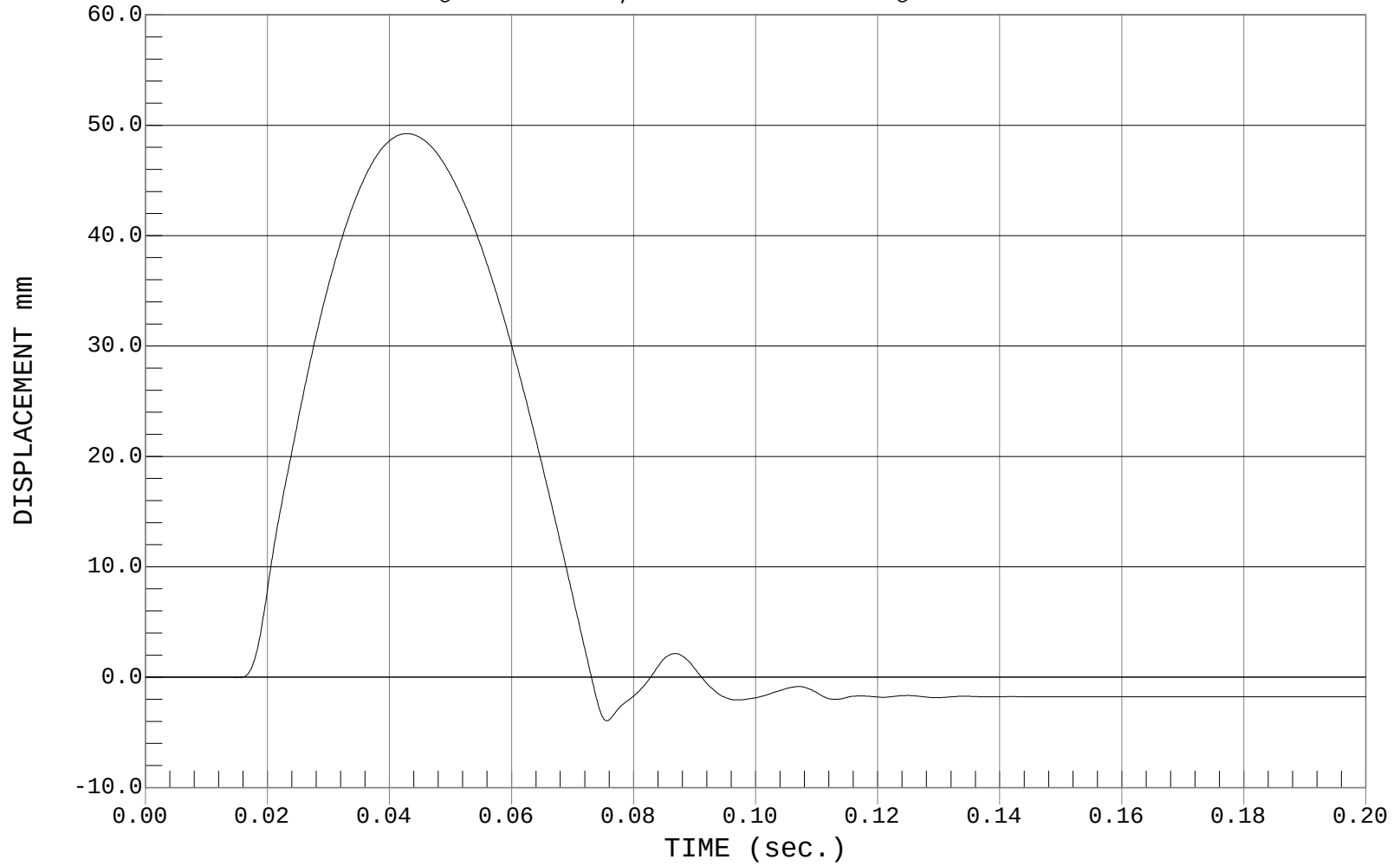
UPPER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #009

Test Date: 10-26-01
Speed: 13.12 FT/SEC, 4.00 M/SEC

— 1 DISPLACEMENT, D01594DF.D07

Ymin = -3.95 mm @ 0.0756 sec., Ymax = 49.24 mm @ 0.0428 sec.





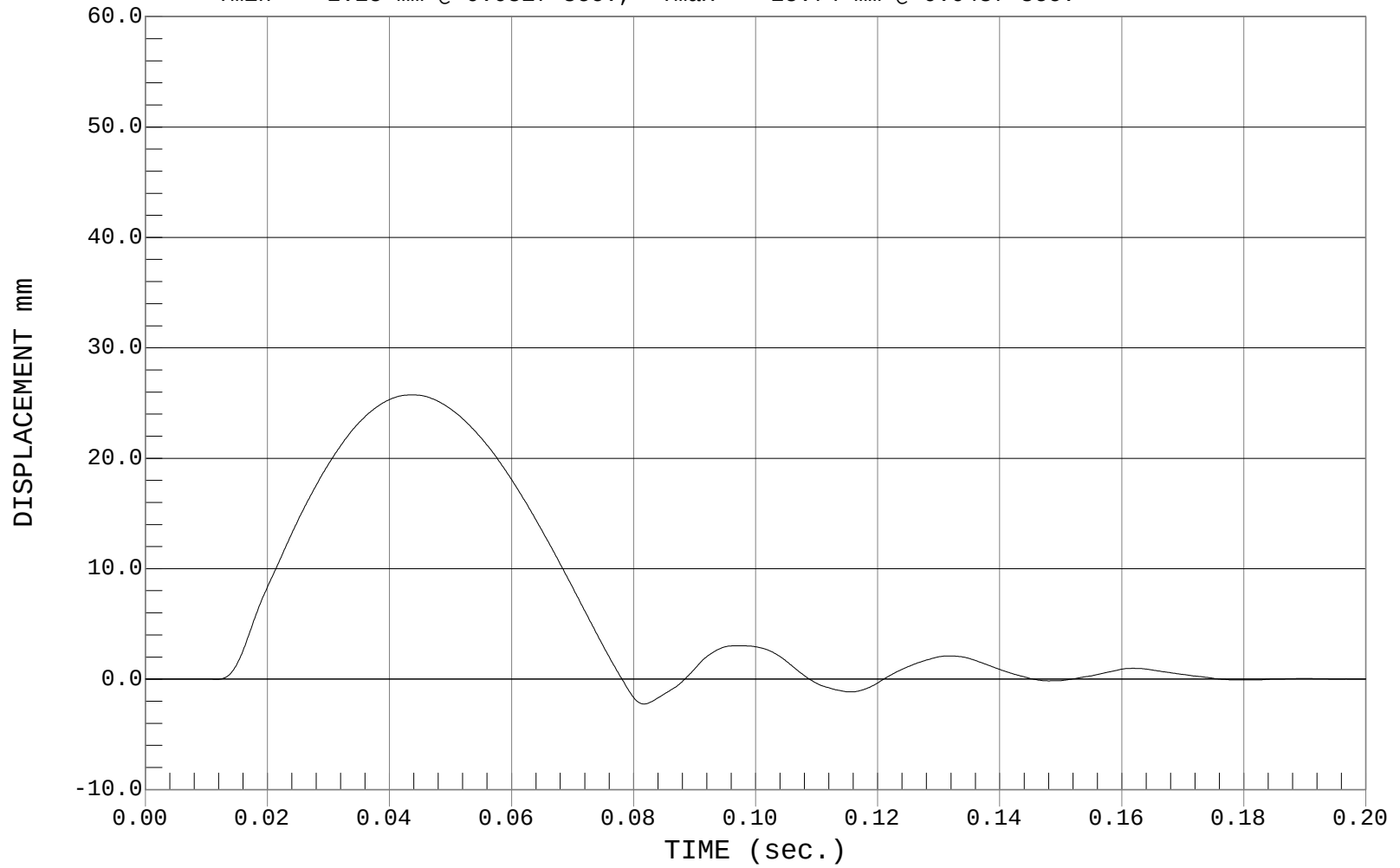
MIDDLE RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #009

Test Date: 10-26-01
Speed: 6.56 FT/SEC, 2.00 M/SEC

— 1 DISPLACEMENT, D01595DF.D05

Ymin = -2.25 mm @ 0.0817 sec., Ymax = 25.74 mm @ 0.0437 sec.





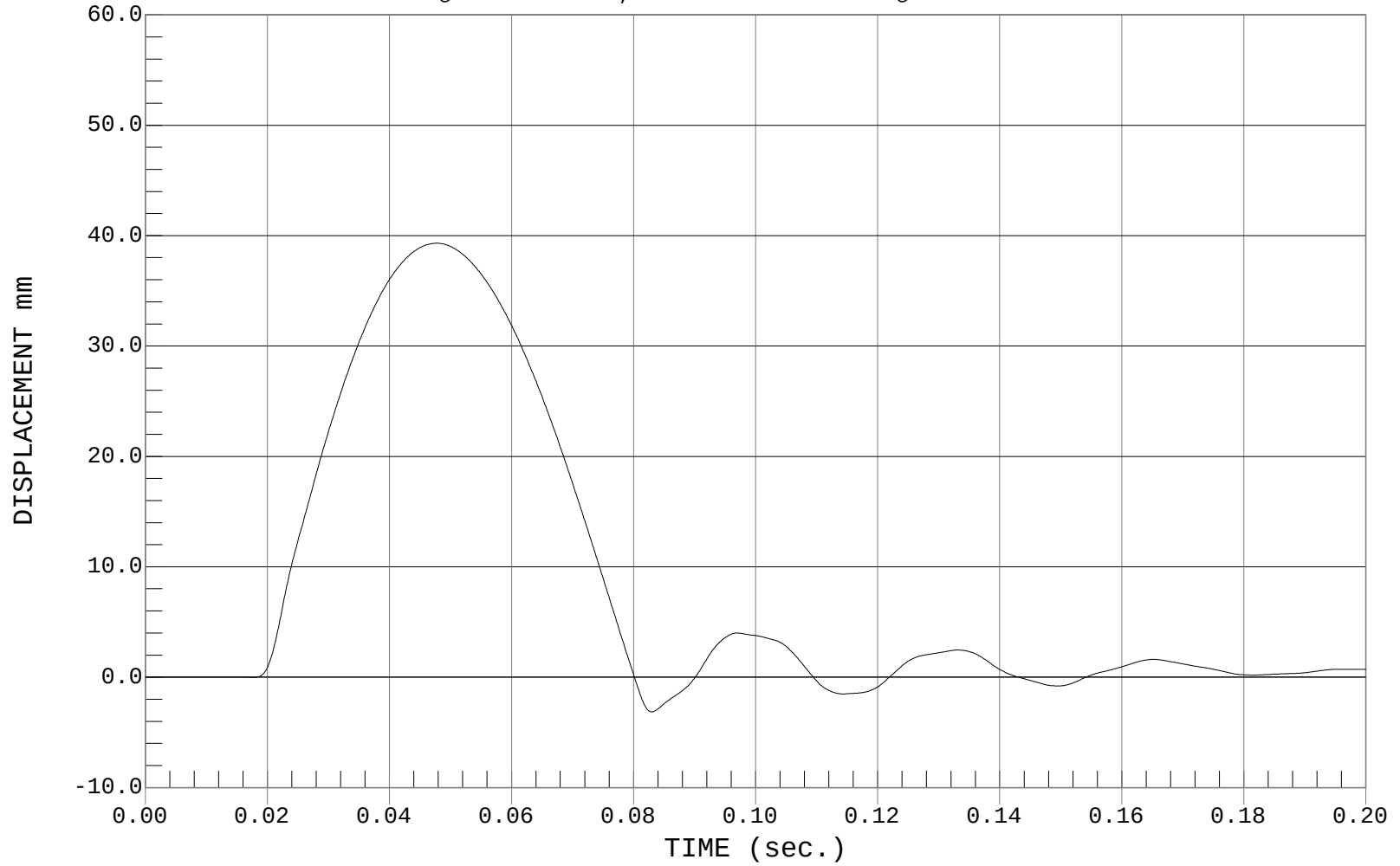
MIDDLE RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #009

Test Date: 10-26-01
Speed: 9.84 FT/SEC, 3.00 M/SEC

— 1 DISPLACEMENT, D01595DF.D06

Ymin = -3.14 mm @ 0.0830 sec., Ymax = 39.31 mm @ 0.0477 sec.





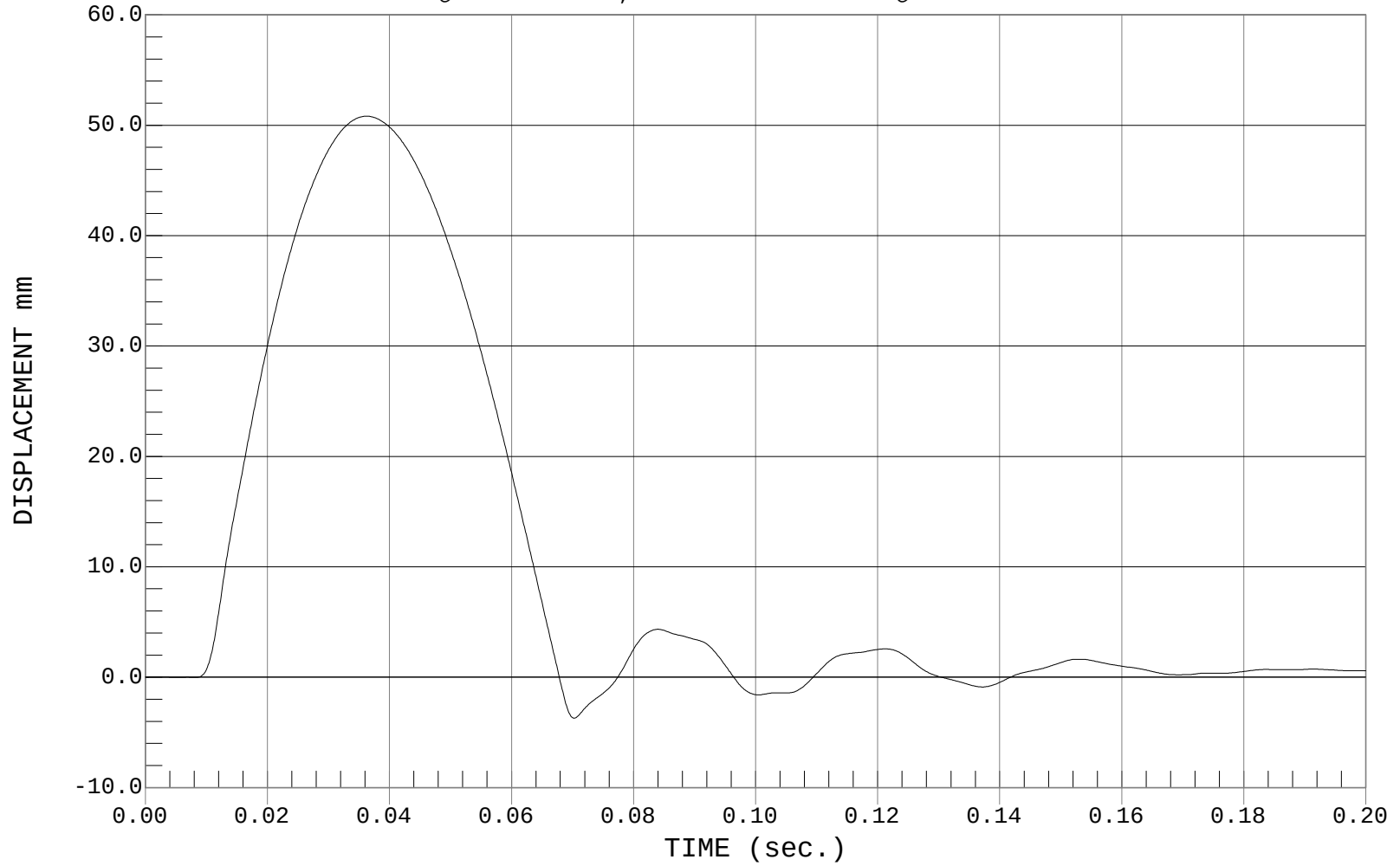
MIDDLE RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #009

Test Date: 10-26-01
Speed: 13.12 FT/SEC, 4.00 M/SEC

— 1 DISPLACEMENT, D01595DF.D07

Ymin = -3.71 mm @ 0.0703 sec., Ymax = 50.82 mm @ 0.0362 sec.





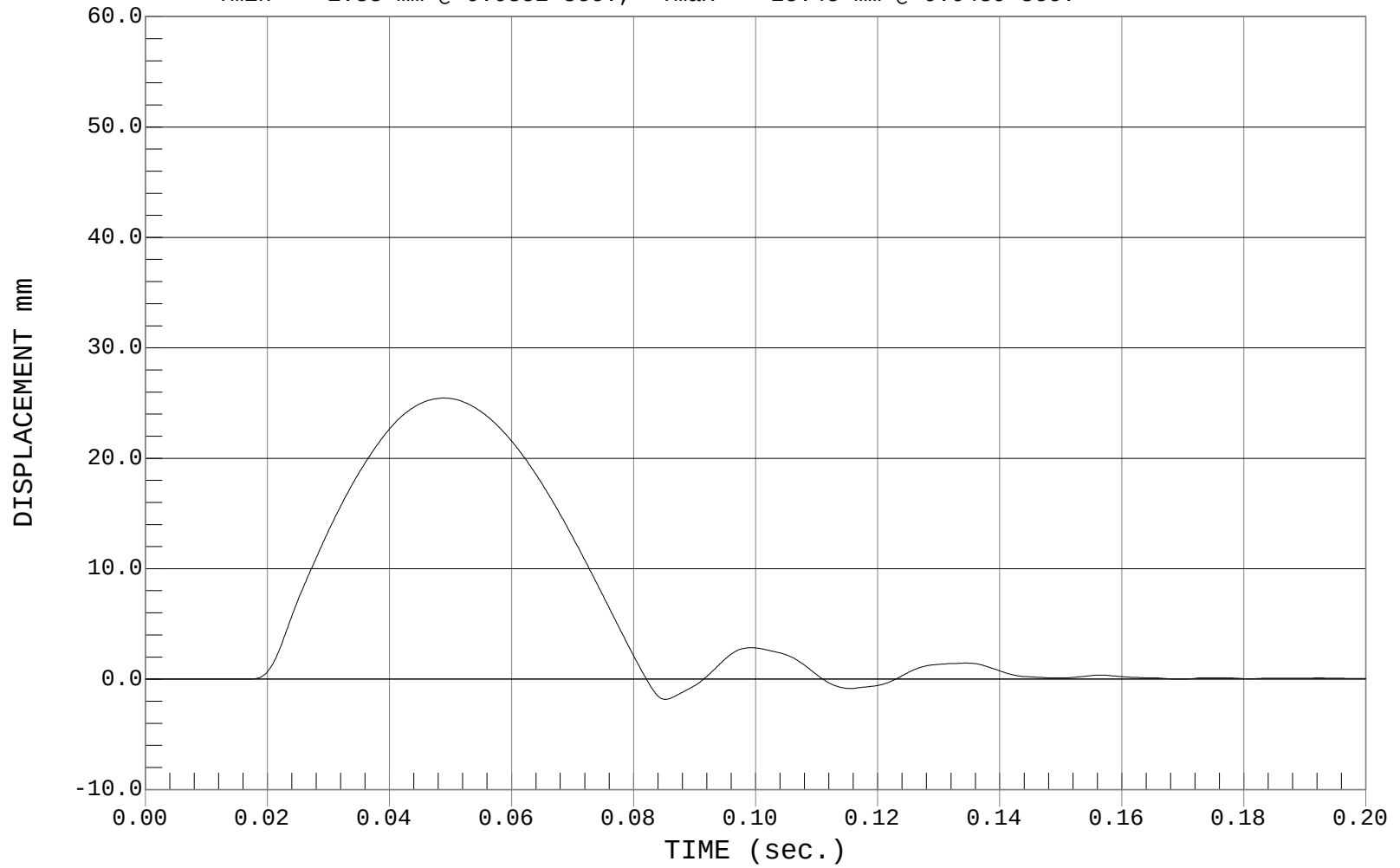
LOWER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #009

Test Date: 10-26-01
Speed: 6.56 FT/SEC, 2.00 M/SEC

— 1 DISPLACEMENT, D01596DF.D05

Ymin = -1.83 mm @ 0.0852 sec., Ymax = 25.45 mm @ 0.0489 sec.





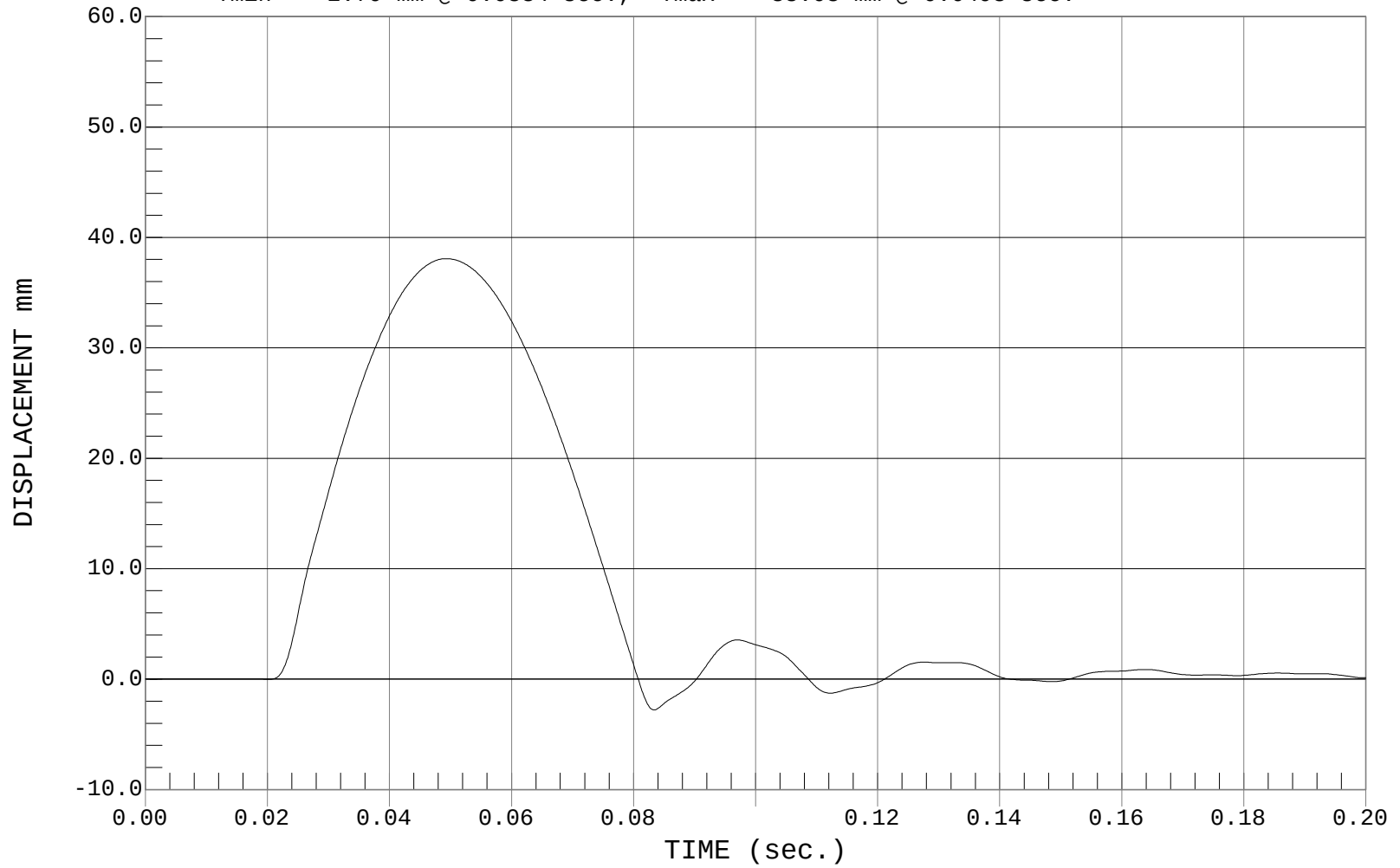
LOWER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #009

Test Date: 10-26-01
Speed: 9.84 FT/SEC, 3.00 M/SEC

— 1 DISPLACEMENT, D01596DF.D06

Ymin = -2.79 mm @ 0.0834 sec., Ymax = 38.08 mm @ 0.0493 sec.





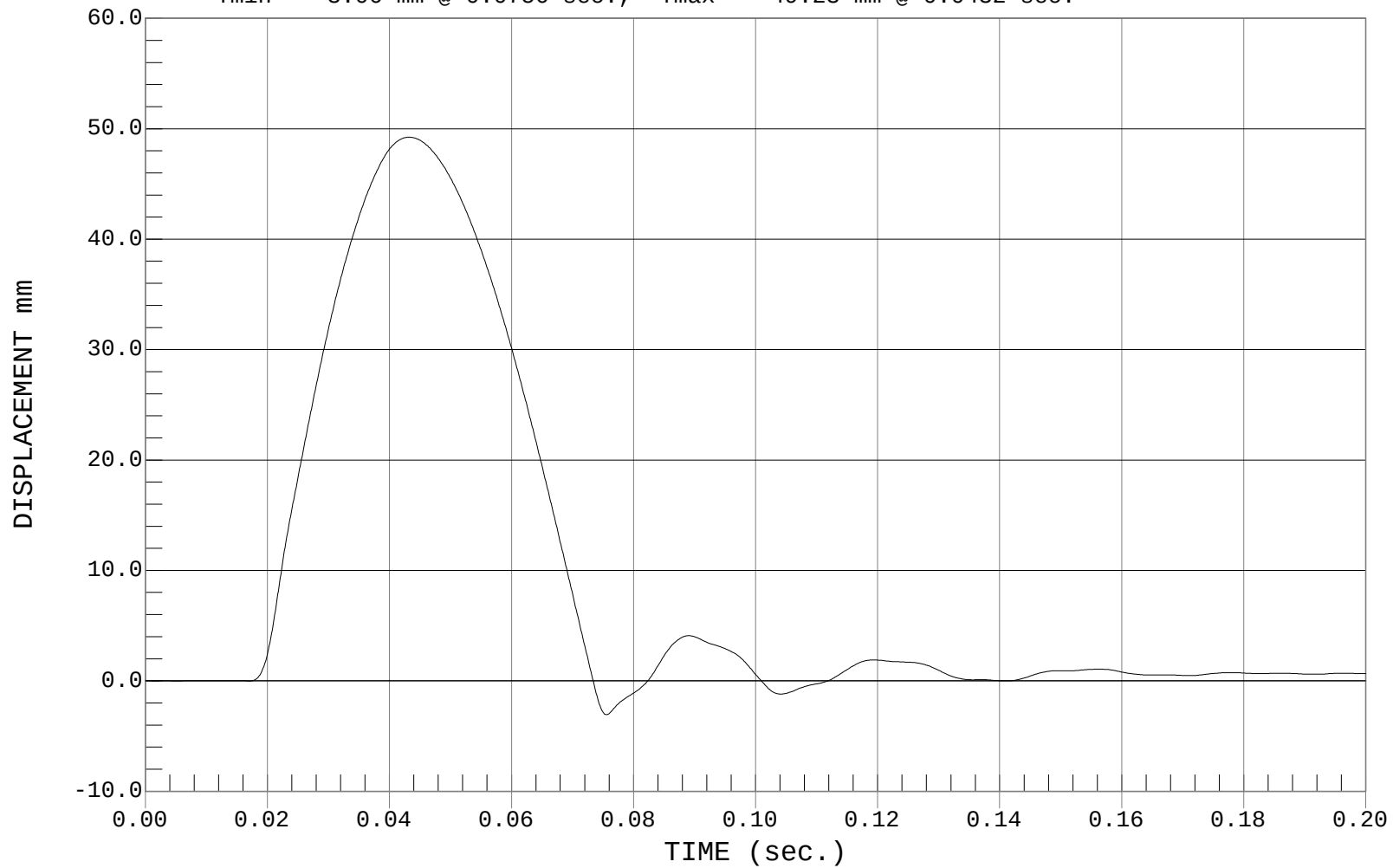
LOWER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #009

Test Date: 10-26-01
Speed: 13.12 FT/SEC, 4.00 M/SEC

— 1 DISPLACEMENT, D01596DF.D07

Ymin = -3.06 mm @ 0.0756 sec., Ymax = 49.23 mm @ 0.0432 sec.



MGA RESEARCH CORPORATION
ABDOMEN TEST
EUROSID 2 DUMMY

Date: 10/29/01

Dummy Serial Number: 009

Test Number: D011597

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.4
Relative Humidity (%)	10 – 70	40
Probe Speed (m/s)	3.90 – 4.10	3.99
Maximum Impact Force	4.00 – 4.80 kN	4.65
Time of Maximum Force	10.60 – 13.00 ms	10.90
Maximum Total Abdomen Force	2.20 – 2.70 kN	2.23
Time of Max. Total Force	10.00 – 12.30 ms	10.80

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



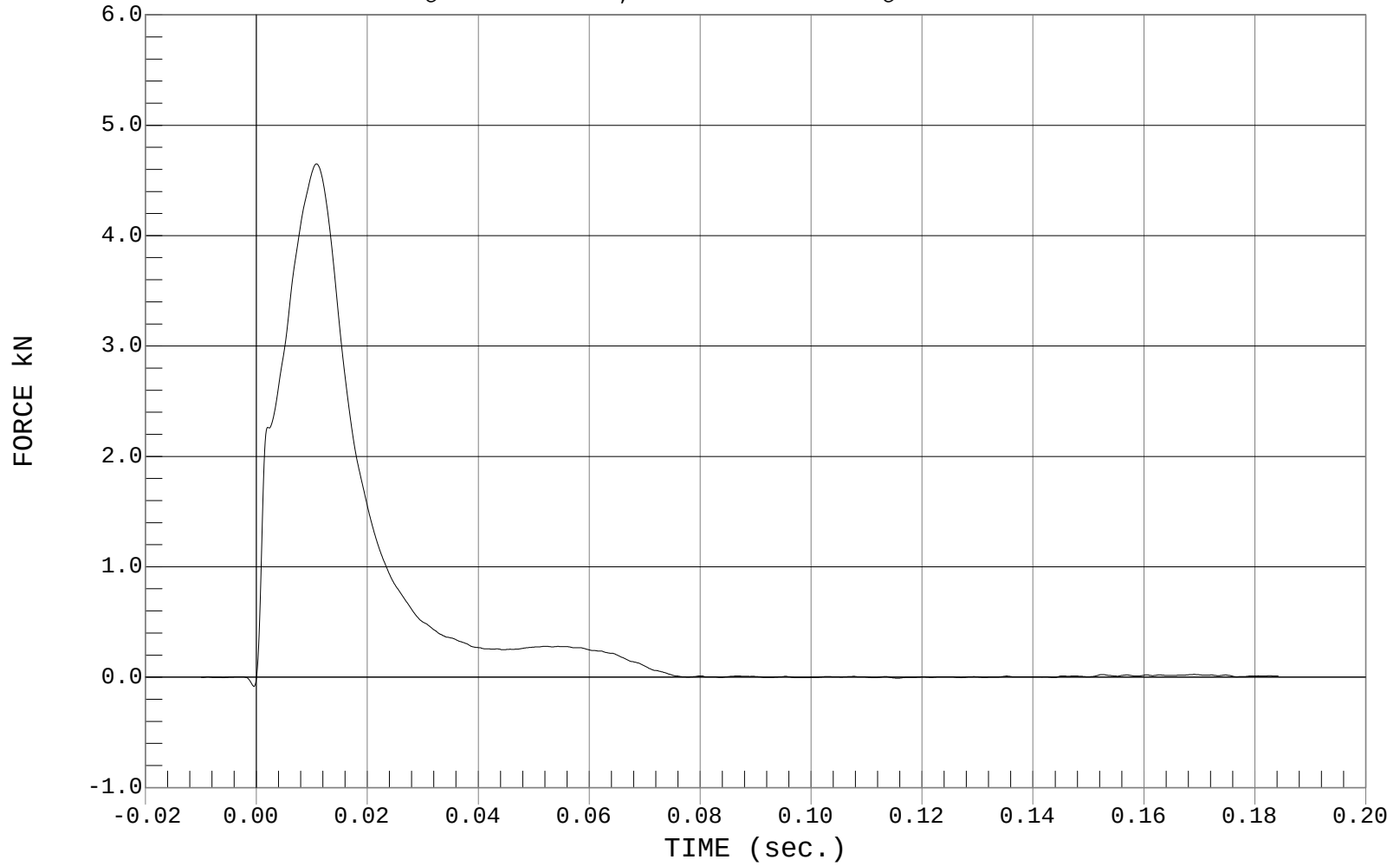
IMPACTOR FORCE

Test Desc.: Dummy Calibration - Abdomen Impact
Component: Dummy #009

Test Date: 10-29-01
Speed: 13.08 FT/SEC, 3.99 M/SEC

— 1 FORCE, D01597FT.F01

Ymin = -.08 kN @ -0.0004 sec., Ymax = 4.65 kN @ 0.0109 sec.





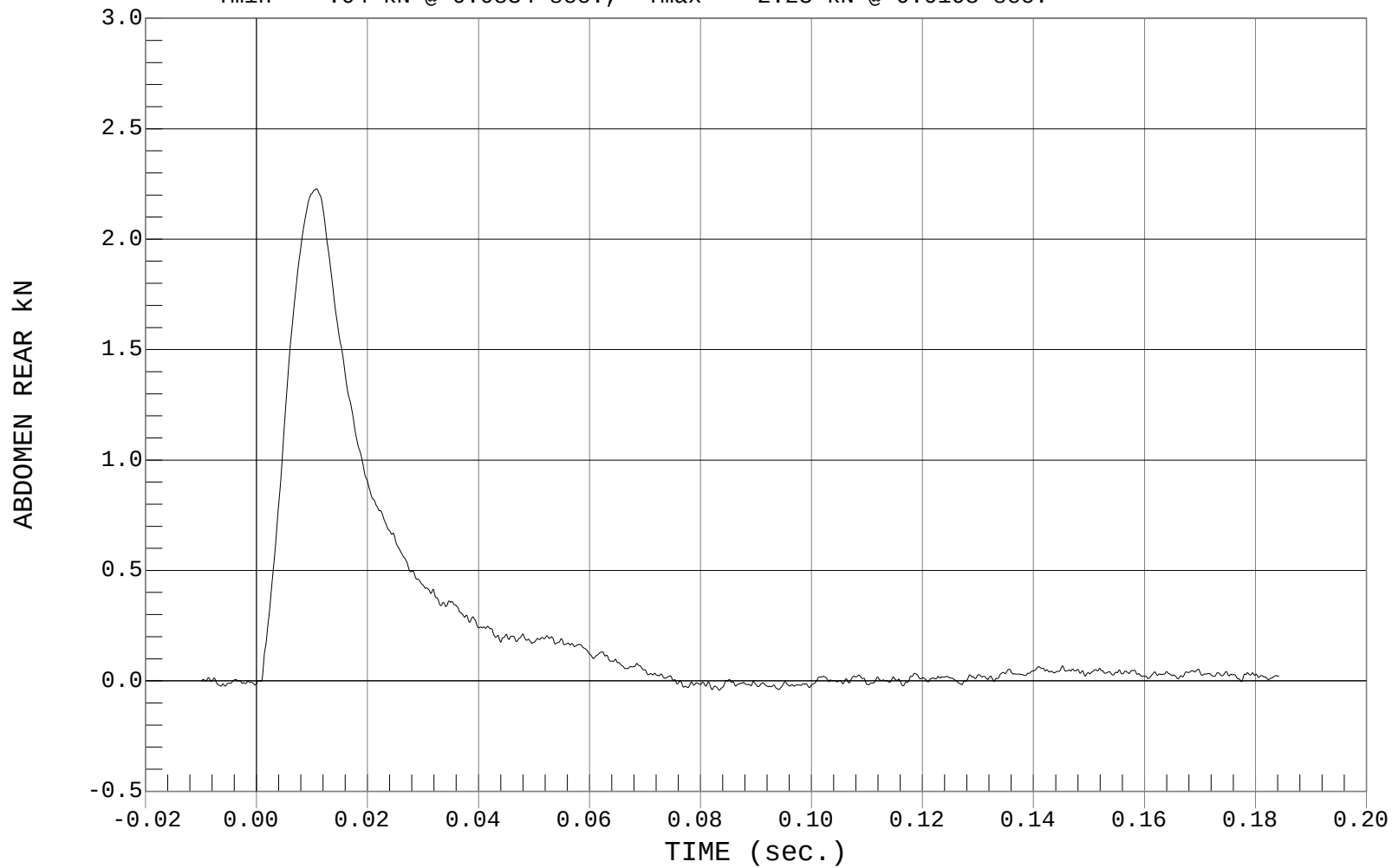
ABDOMEN FORCE

Test Desc.: Dummy Calibration - Abdomen Impact
Component: Dummy #009

Test Date: 10-29-01
Speed: 13.08 FT/SEC, 3.99 M/SEC

— 1 ABDOMEN REAR, D01597FT.F02

Ymin = -.04 kN @ 0.0834 sec., Ymax = 2.23 kN @ 0.0108 sec.



MGA RESEARCH CORPORATION
LUMBAR SPINE TEST
EUROSID 2 DUMMY

Date: 10/29/01

Dummy Serial Number: 009

Test Number: D011598

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.0 – 22.0	21.8
Relative Humidity (%)		10 – 70	33
Pendulum Speed		5.95 – 6.15	6.10
Pendulum Deceleration	10 msec	2.46 - 1.59 m/sec	-1.86
	20 msec	5.25 - 4.07 m/sec	-4.25
	25 msec	6.64 - 5.3 m/sec	-5.33
	30 msec	≥ -6.5 m/sec	-6.10
Maximum Flexion Angle		45.0 – 55.0 deg	54.5
Time of Max. Flexion Angle		39.0 – 53.0 ms	46.7
Maximum Angle Theta (A)		31.0 – 35.0 deg	33.7
Time of Max. Theta (A)		44.0 – 52.0 ms	46.8
Maximum Angle Theta (B)		28.96– 31.46 deg	29.97
Time of Max. Theta (B)		44.0 – 52.0 ms	48.7

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

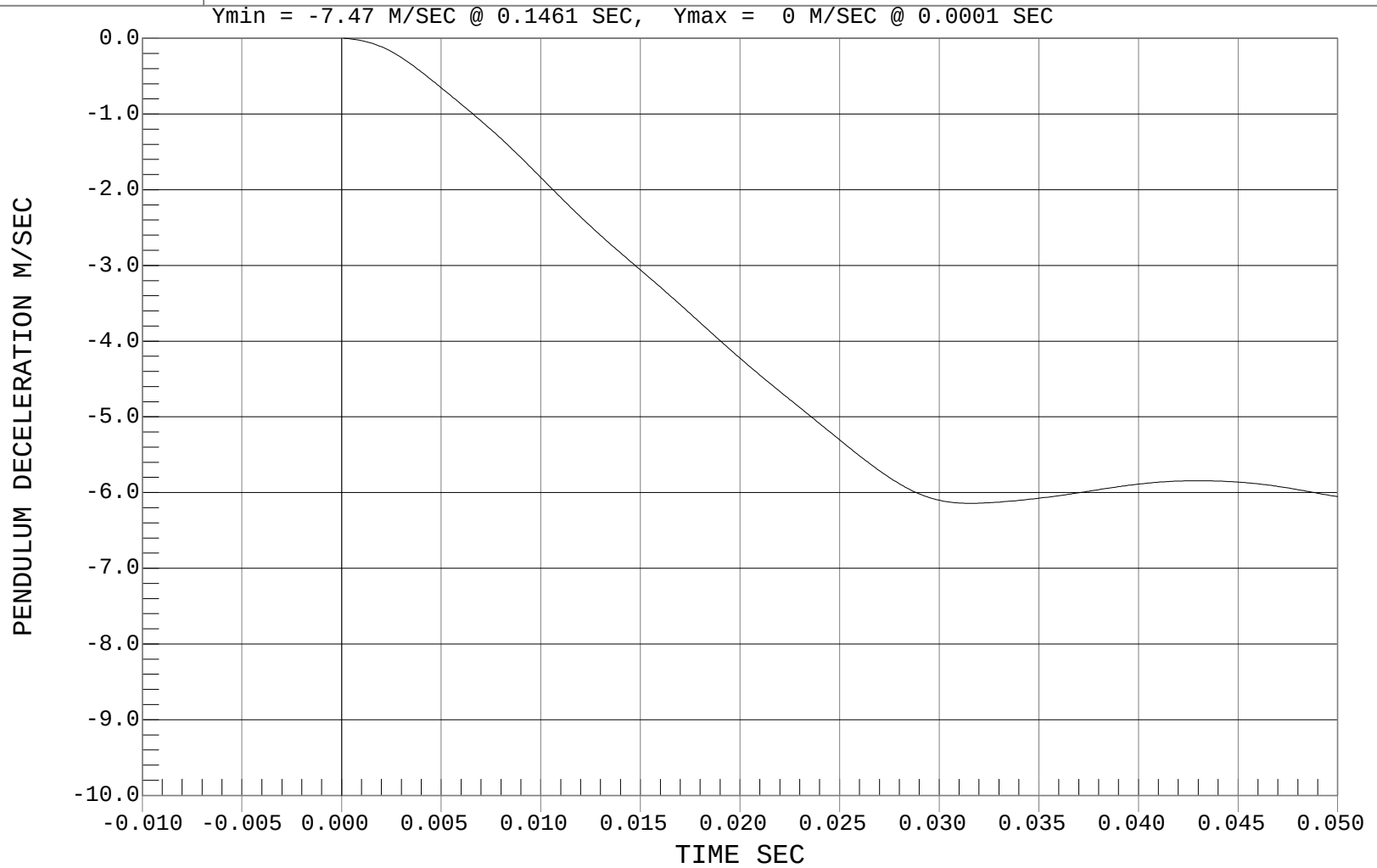


PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #009

Test Date: 10-29-01
Speed: 20.03 FT/SEC, 6.10 M/SEC

— 1 PENDULUM DECELERATION, D01598AI.V04





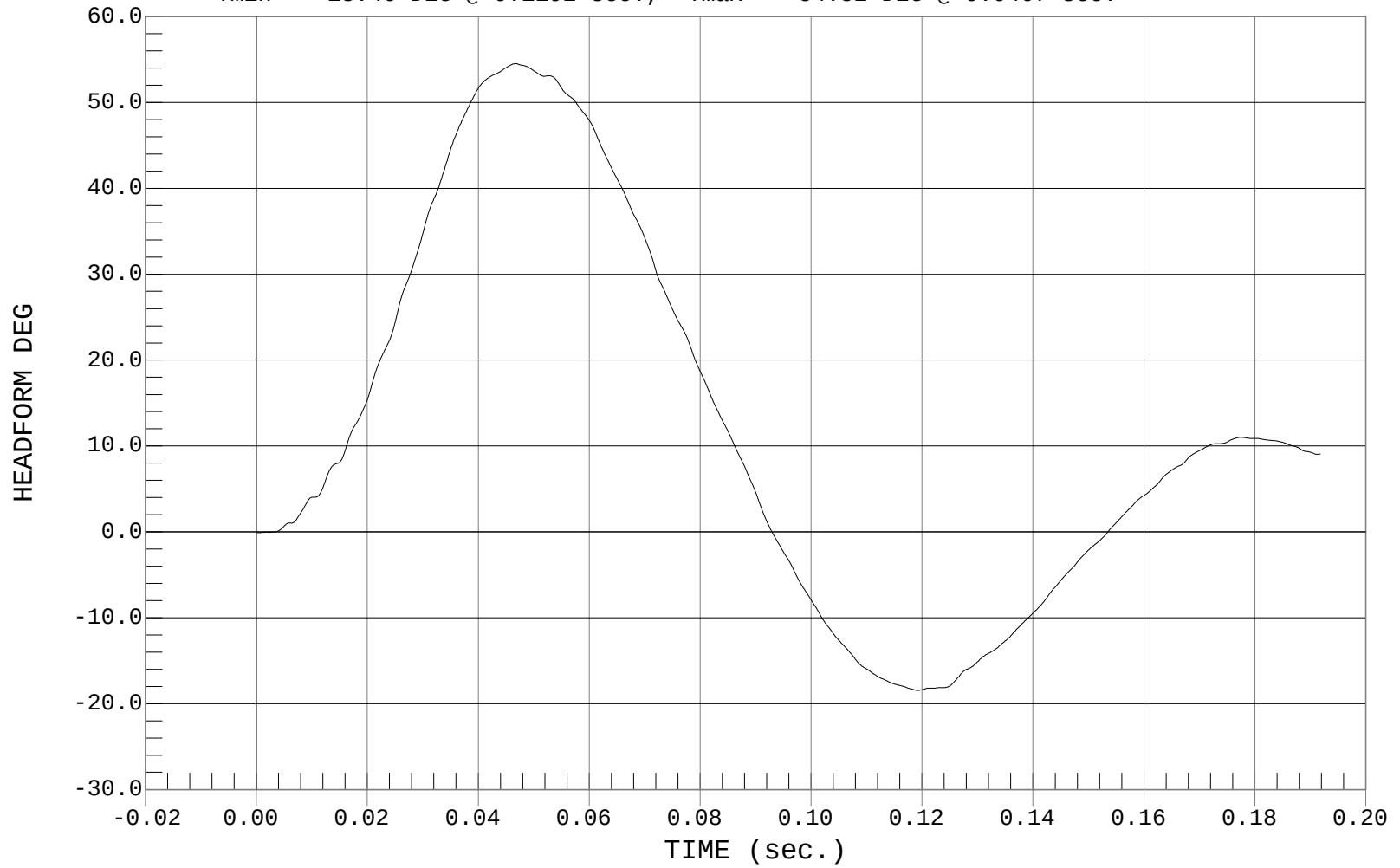
FLEXION ANGLE

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #009

Test Date: 10-29-01
Speed: 20.03 FT/SEC, 6.10 M/SEC

1 HEADFORM, D01598DT.D08

Ymin = -18.46 DEG @ 0.1192 sec., Ymax = 54.52 DEG @ 0.0467 sec.





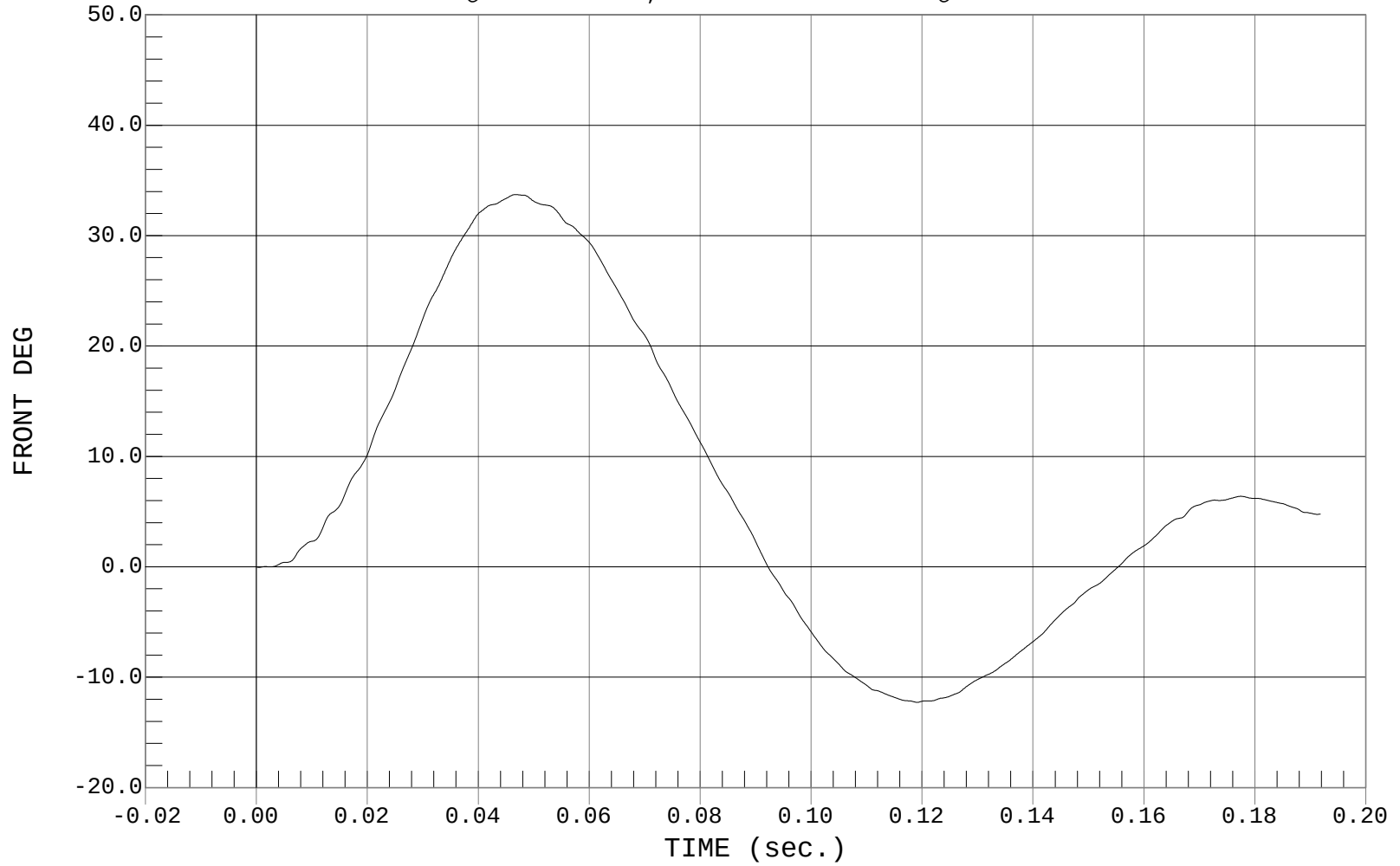
THETA A

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #009

Test Date: 10-29-01
Speed: 20.03 FT/SEC, 6.10 M/SEC

— 1 FRONT, D01598DT.D05

Ymin = -12.28 DEG @ 0.1191 sec., Ymax = 33.72 DEG @ 0.0468 sec.





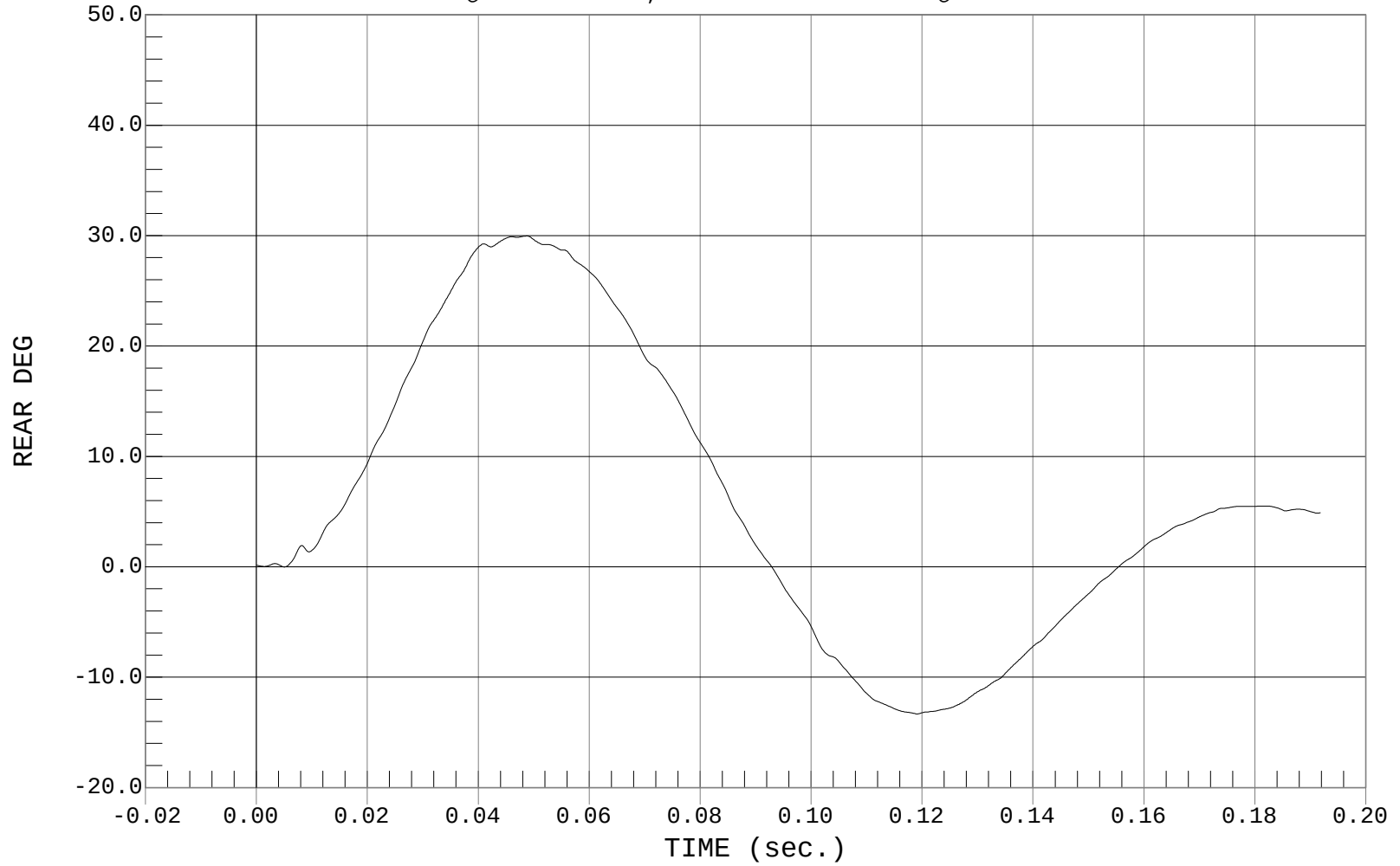
THETA B

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #009

Test Date: 10-29-01
Speed: 20.03 FT/SEC, 6.10 M/SEC

— 1 REAR, D01598DT.D06

Ymin = -13.33 DEG @ 0.1191 sec., Ymax = 29.97 DEG @ 0.0487 sec.



MGA RESEARCH CORPORATION
PELVIS TEST
EUROSID 2 DUMMY

Date: 10/29/01

Dummy Serial Number: 009

Test Number: D011599

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.4
Relative Humidity (%)	10 – 70	40
Pendulum Speed	6.20 – 6.30 m/s	6.25
Maximum Impactor Force	9.80 – 12.20 kN	10.41
Time of Max. Impactor Force	9.50 – 12.50 ms	11.40
Maximum Pubic Force	2.65 – 3.35 kN	3.29
Time of Max. Pubic Force	10.00 – 13.00 ms	11.80

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



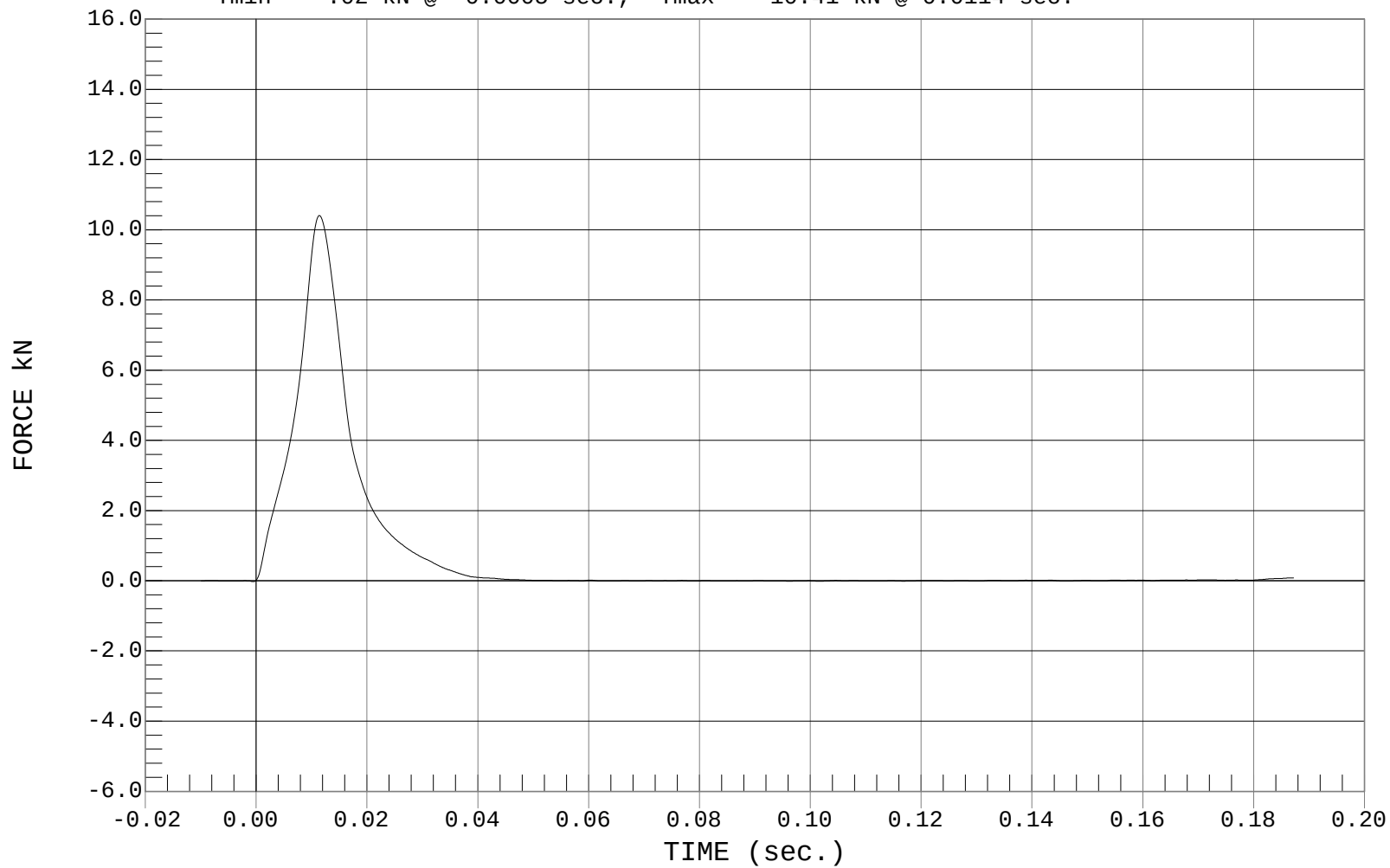
IMPACTOR FORCE

Test Desc.: Dummy Calibration - Pelvis Impact
Component: Dummy #009

Test Date: 10-29-01
Speed: 20.52 FT/SEC, 6.25 M/SEC

— 1 FORCE, D01599FT.F01

Ymin = -.02 kN @ -0.0005 sec., Ymax = 10.41 kN @ 0.0114 sec.





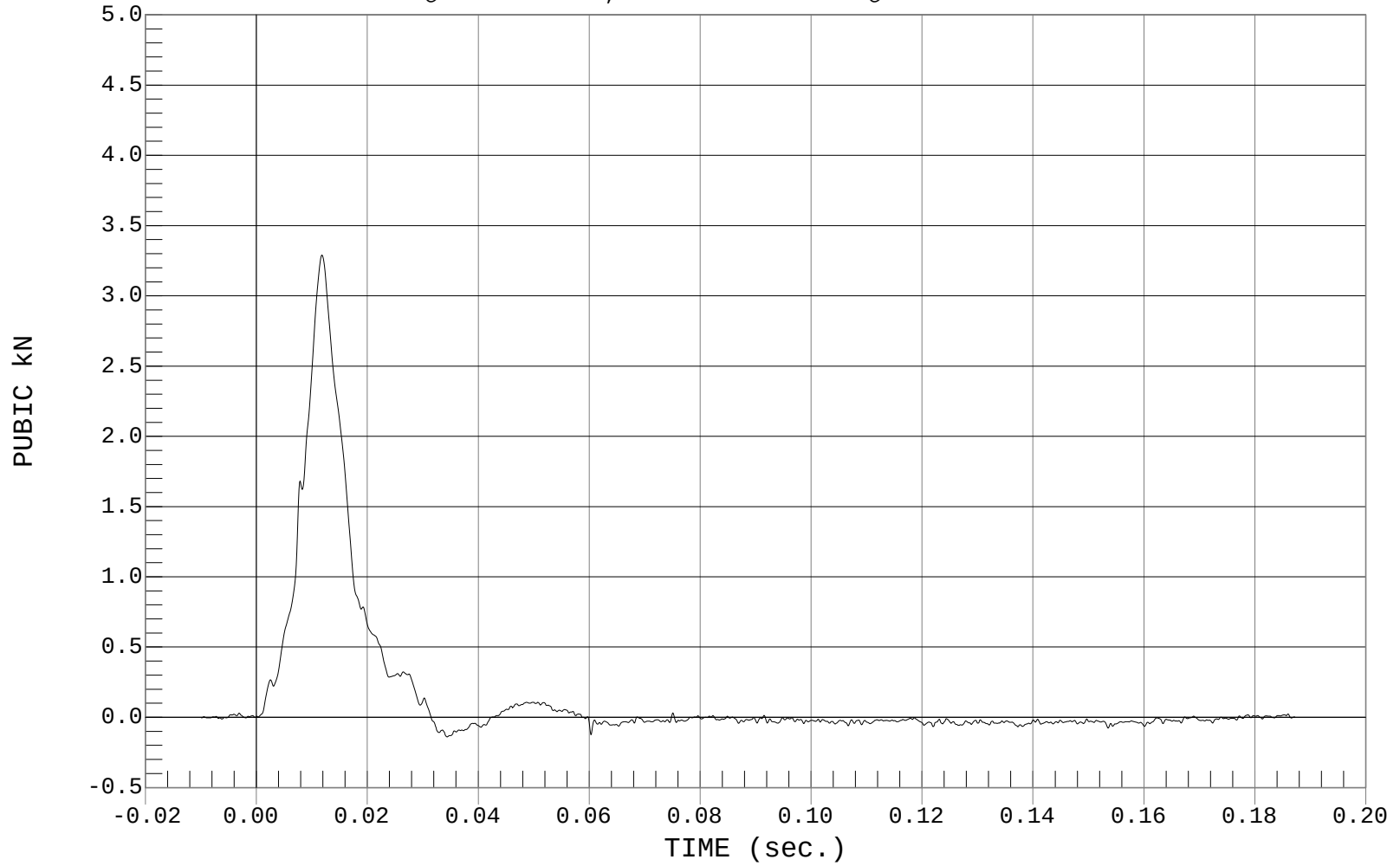
PUBIC FORCE

Test Desc.: Dummy Calibration - Pelvis Impact
Component: Dummy #009

Test Date: 10-29-01
Speed: 20.52 FT/SEC, 6.25 M/SEC

— 1 PUBIC, D01599FT.F02

Ymin = -.14 kN @ 0.0344 sec., Ymax = 3.29 kN @ 0.0118 sec.



CERTIFICATION DATA

Dummy Serial Number: 010

Calibration Test Results Summary

Dummy Serial Number: 010

Post-Test Calibration

Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all impact test requirements.
Shoulder Impact Test:	The shoulder passed all impact test requirements.
Rib Tests:	All ribs passed all impact test requirements.
Abdomen Test:	The abdomen passed all impact test requirements.
Lumbar Spine Test:	The lumbar spine passed all impact test requirements.
Pelvis Test:	The pelvis passed all impact test requirements.

MGA RESEARCH CORPORATION
HEAD DROP TEST
EUROSID 2 DUMMY

Date: 11/1/01
Dummy Serial Number: 010
Test Number: D011601

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.3
Relative Humidity (%)	10 – 70	52
Peak Resultant Acceleration	100 – 150 g's	146
Time of Max. Res. Acceleration		37.6 msec

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



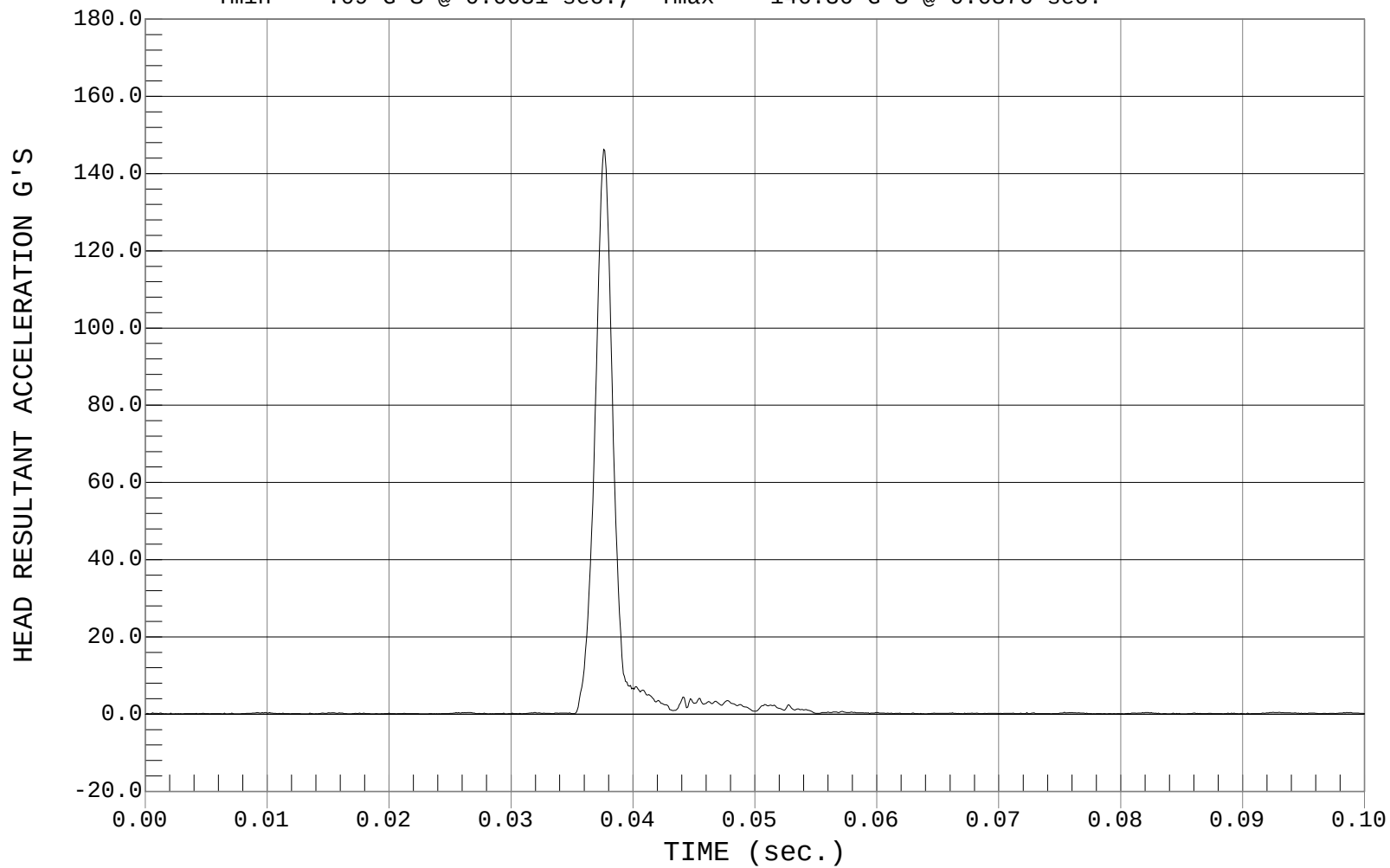
PEAK RESULTANT ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #010

Test Date: 11-01-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

— 1 HEAD RESULTANT ACCELERATION, D01601AV.A01

Ymin = .09 G'S @ 0.0031 sec., Ymax = 146.36 G'S @ 0.0376 sec.



MGA RESEARCH CORPORATION
NECK PENDULUM TEST
EUROSID 2 DUMMY

Date: 11/1/01
Dummy Serial Number: 010
Test Number: D011602

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.0 – 22.0	21.5
Relative Humidity (%)		10 – 70	50
Pendulum Speed		3.3 - 3.5	3.3
Pendulum Deceleration	3 msec	~.25 - ~.53 m/sec	-.32
	8 msec	~1.59 - ~2.04 m/sec	-1.63
	14 msec	~3.20 - ~3.85 m/sec	-3.28
Maximum Flexion Angle		49.0 – 59.0 deg	57.3
Time of Max. Flexion Angle		54.0 – 66.0 ms	61.3
Maximum Angle Theta (A)		32.0 – 37.0 deg	34.8
Time of Max. Theta (A)		53.0 – 63.0 ms	61.1
Maximum Angle Theta (B)		29.94 – 32.44 deg	31.53
Time of Max. Theta (B)		54.0 – 64.0 ms	61.1

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



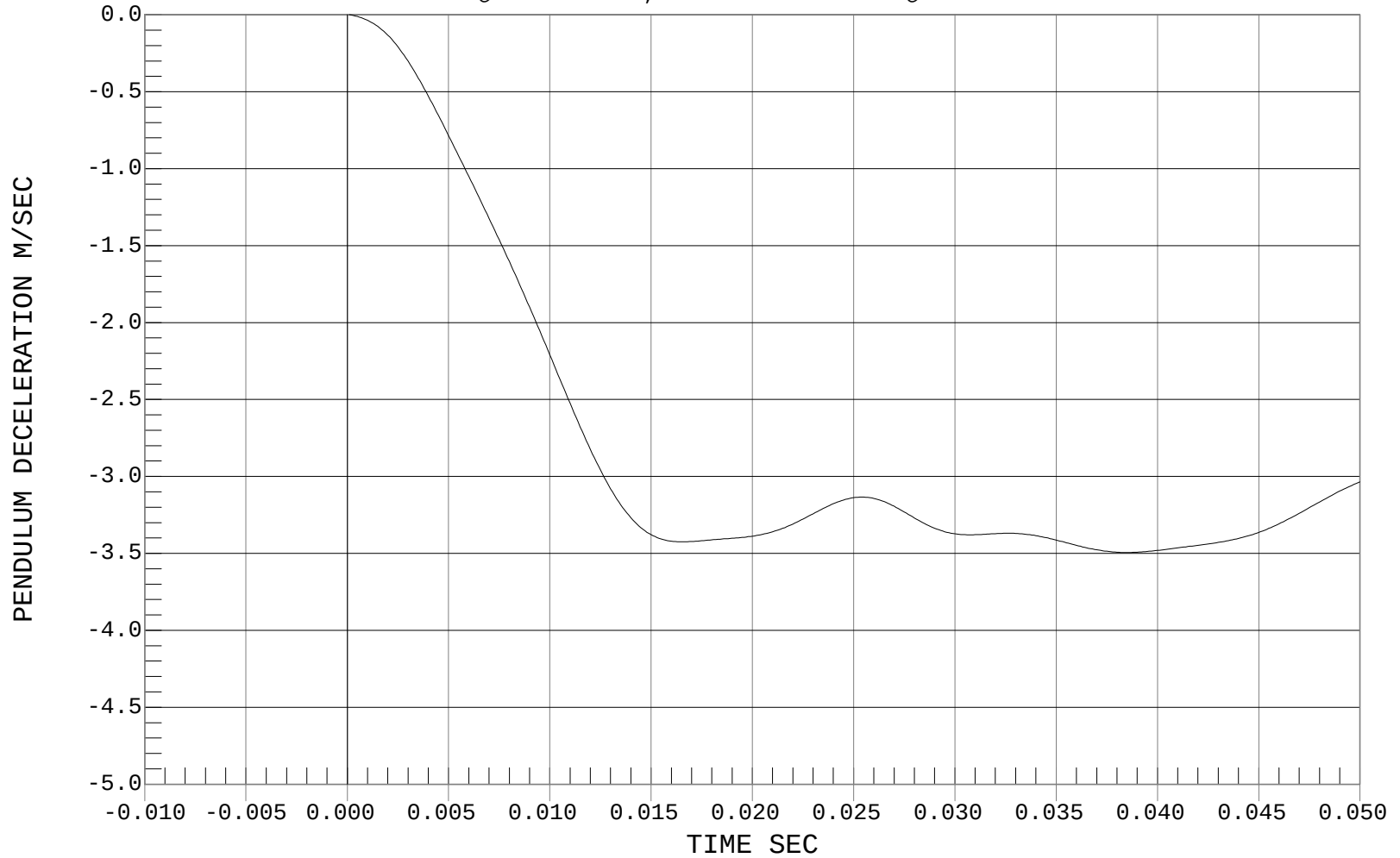
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #010

Test Date: 11-01-01
Speed: 10.96 FT/SEC, 3.34 M/SEC

— 1 PENDULUM DECELERATION, D01602AI.V04

Ymin = -4.27 M/SEC @ 0.1903 SEC, Ymax = 0 M/SEC @ 0.0001 SEC





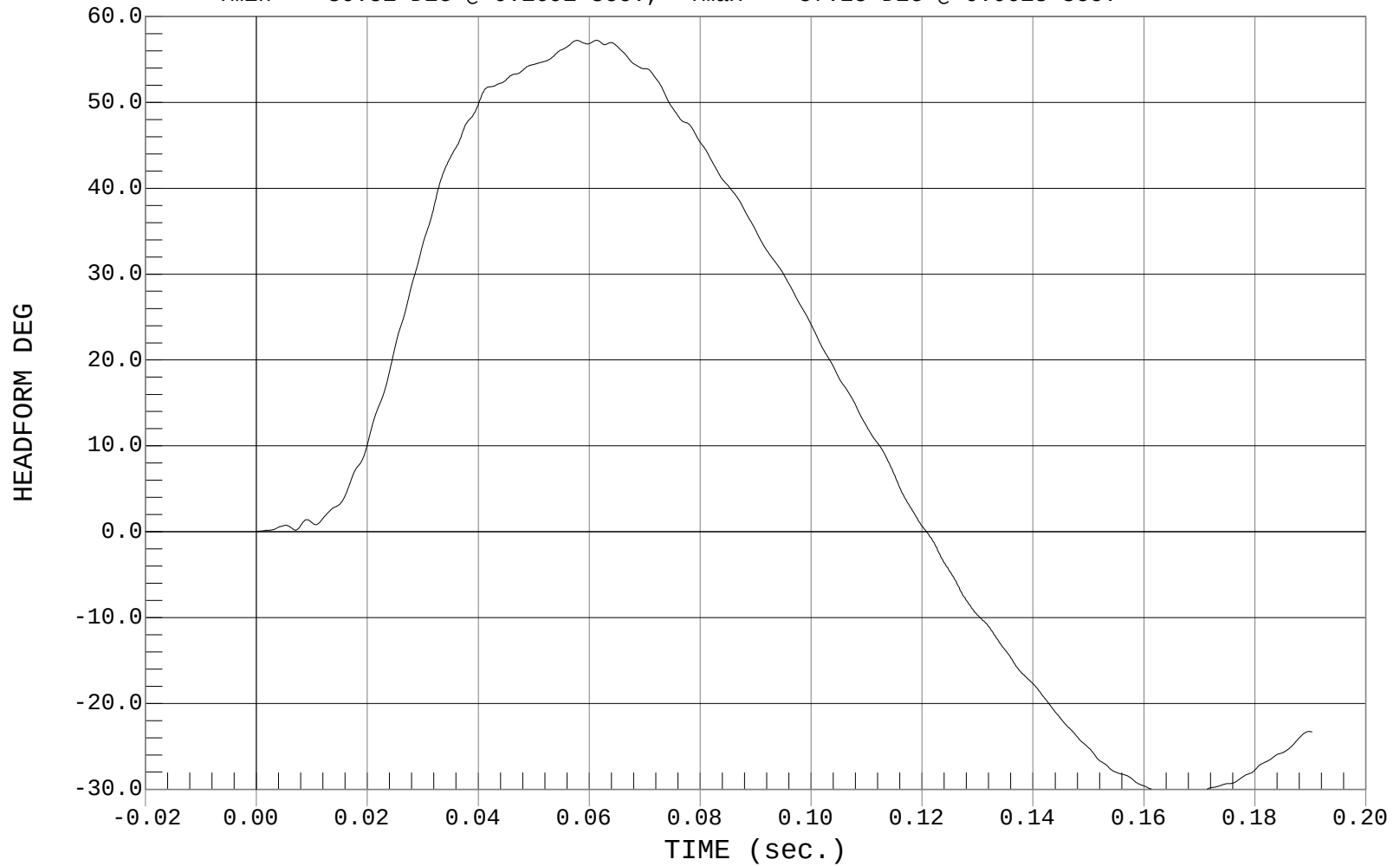
FLEXION ANGLE

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #010

Test Date: 11-01-01
Speed: 10.96 FT/SEC, 3.34 M/SEC

— 1 HEADFORM, D01602DT.D08

Ymin = -30.51 DEG @ 0.1691 sec., Ymax = 57.25 DEG @ 0.0613 sec.





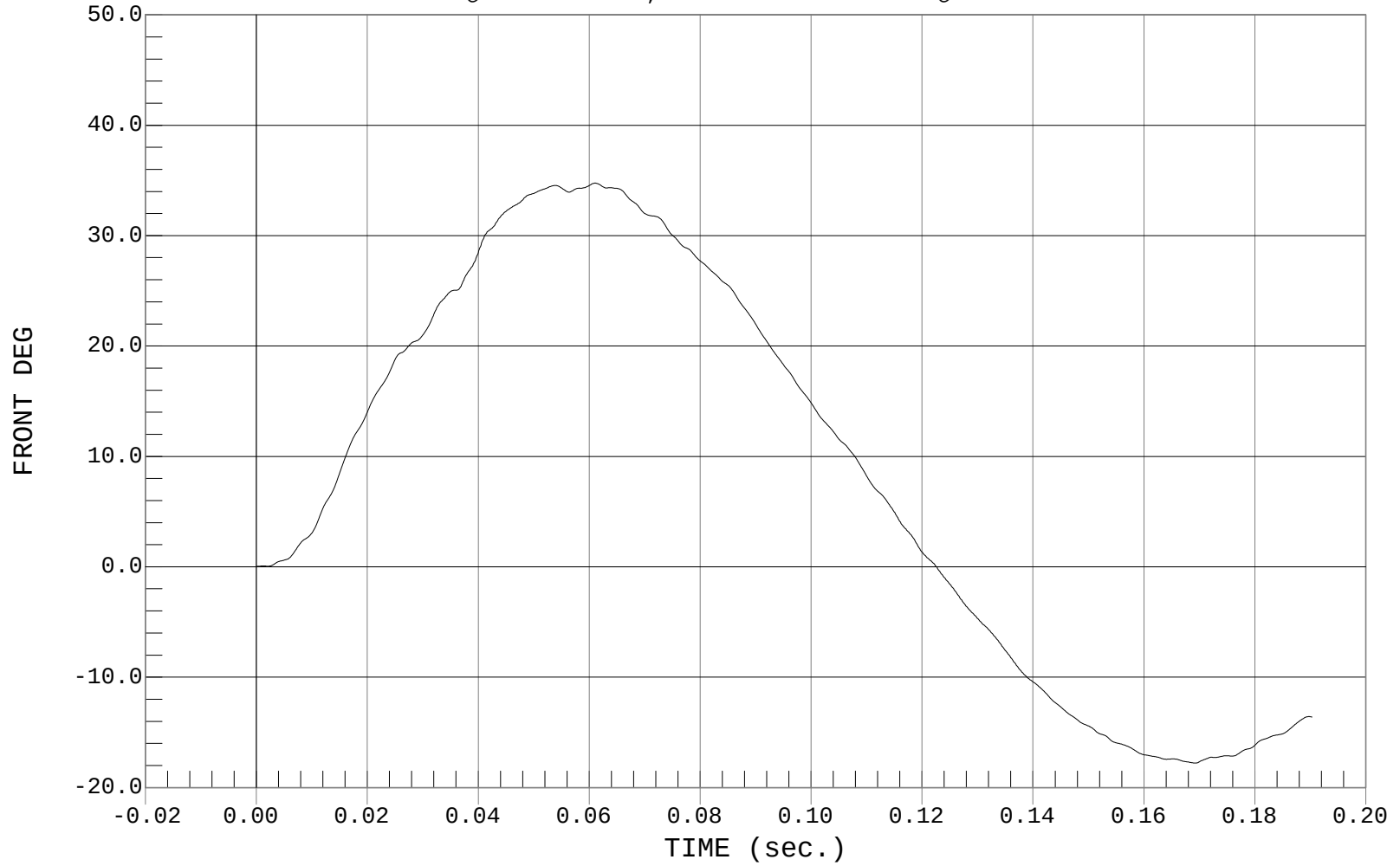
THETA A

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #010

Test Date: 11-01-01
Speed: 10.96 FT/SEC, 3.34 M/SEC

— 1 FRONT, D01602DT.D05

Ymin = -17.79 DEG @ 0.1692 sec., Ymax = 34.76 DEG @ 0.0611 sec.





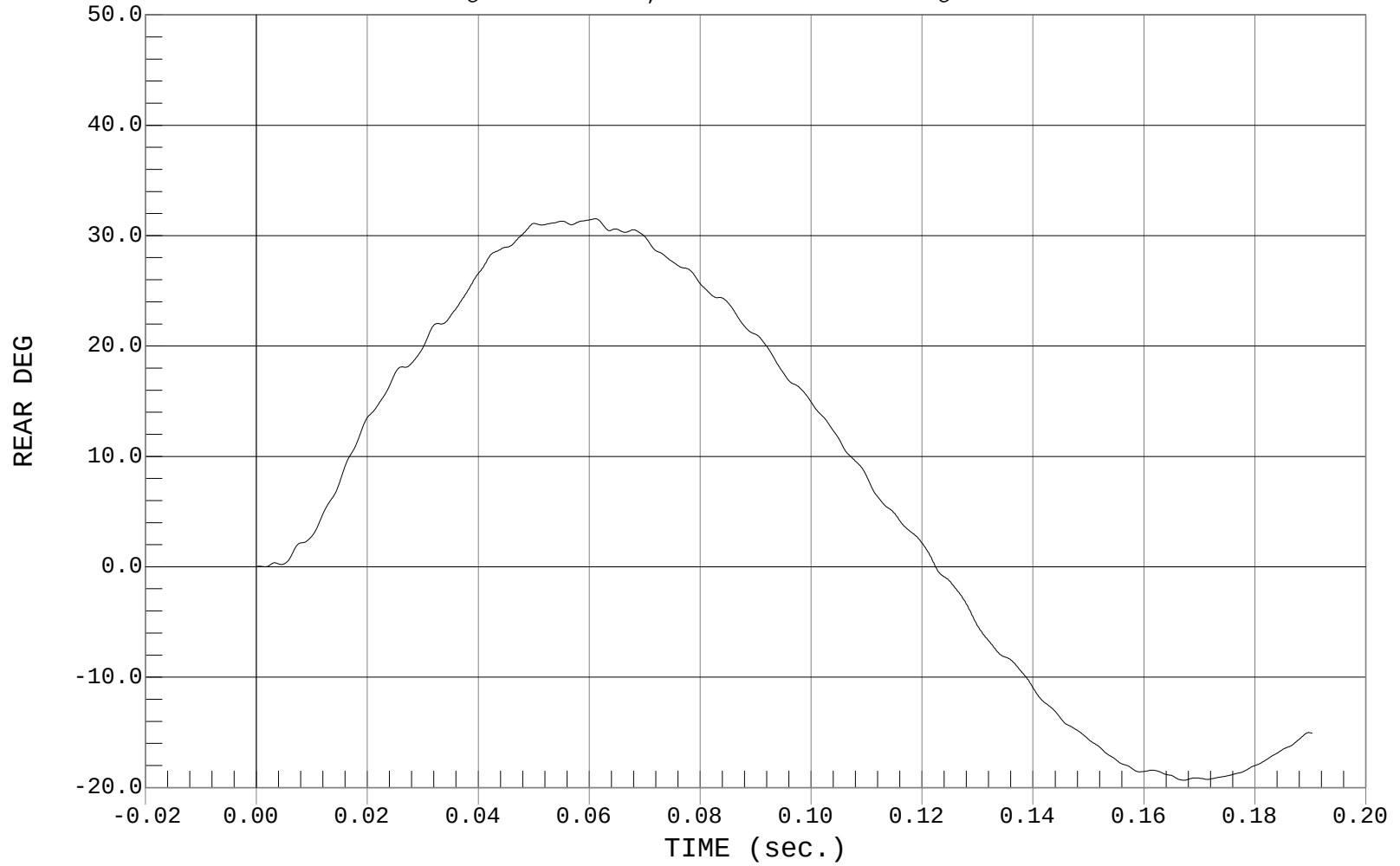
THETA B

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #010

Test Date: 11-01-01
Speed: 10.96 FT/SEC, 3.34 M/SEC

— 1 REAR, D01602DT.D06

Ymin = -19.34 DEG @ 0.1672 sec., Ymax = 31.53 DEG @ 0.0611 sec.



MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
EUROSID 2 DUMMY

Date: 11/5/01
Dummy Serial Number: 010
Test Number: D011603

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.5
Relative Humidity (%)	10 – 70	33
Pendulum Speed	4.2 – 4.4 m/s	4.3
Max. Resultant Acceleration	7.5 – 10.5 g's	10.1
Time of Max. Pendulum Acceleration		23.0 msec

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



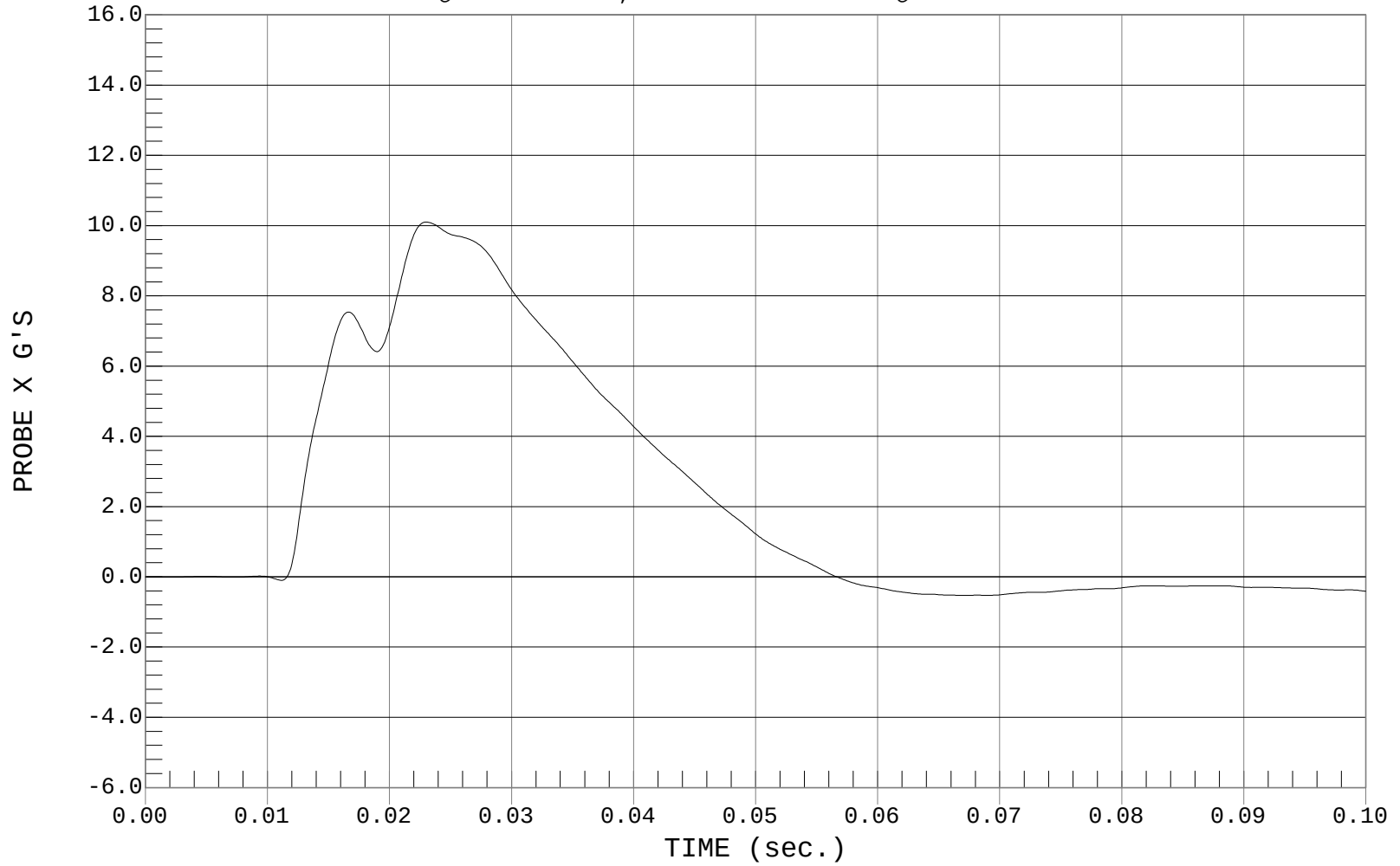
SHOULDER ACCELERATION

Test Desc.: Dummy Calibration - Shoulder Impact
Component: Dummy #010

Test Date: 11-05-01
Speed: 13.94 FT/SEC, 4.25 M/SEC

— 1 PROBE X, D01603AF.A01

Ymin = -.54 G'S @ 0.1065 sec., Ymax = 10.1 G'S @ 0.0230 sec.



MGA RESEARCH CORPORATION
UPPER/MIDDLE/LOWER RIB TESTS
SIDE IMPACT DUMMY (SID)

Date: 10/31/01
Dummy Serial Number: 010
Test Number: D011604/5/6

UPPER RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.9
Relative Humidity (%)	10 – 70	28
Displacement at 2 m/s	23.5 – 27.5 mm	27.0
Displacement at 3 m/s	36.0 – 40.0 mm	39.3
Displacement at 4 m/s	46.0 – 51.0 mm	49.2

MIDDLE RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.9
Relative Humidity (%)	10 – 70	28
Displacement at 2 m/s	23.5 – 27.5 mm	25.2
Displacement at 3 m/s	36.0 – 40.0 mm	38.4
Displacement at 4 m/s	46.0 – 51.0 mm	48.6

LOWER RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.9
Relative Humidity (%)	10 – 70	28
Displacement at 2 m/s	23.5 – 27.5 mm	24.7
Displacement at 3 m/s	36.0 – 40.0 mm	37.3
Displacement at 4 m/s	46.0 – 51.0 mm	48.8

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



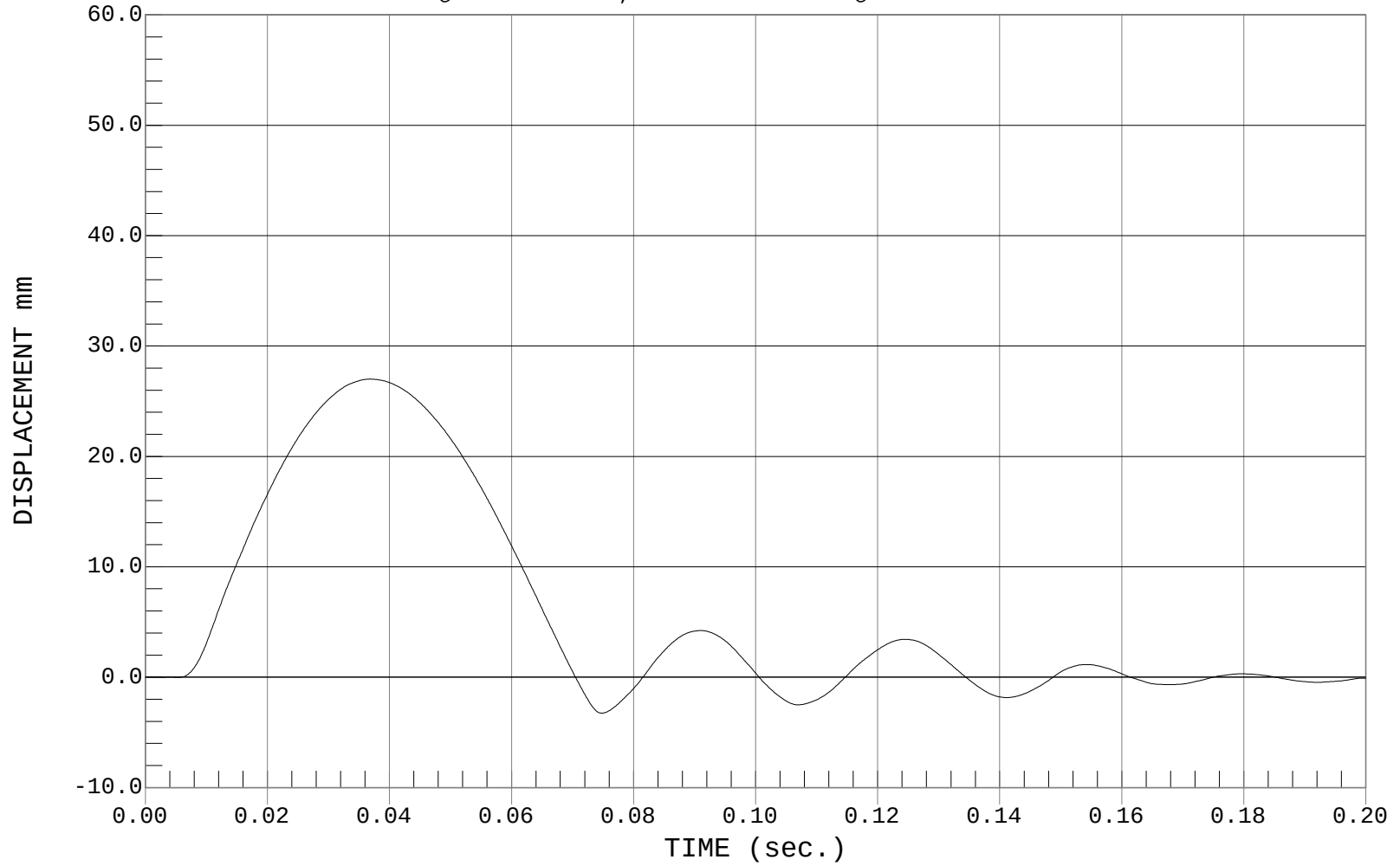
UPPER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-31-01
Speed: 6.56 FT/SEC, 2.00 M/SEC

— 1 DISPLACEMENT, D01604DF.D05

Ymin = -3.26 mm @ 0.0748 sec., Ymax = 27 mm @ 0.0369 sec.





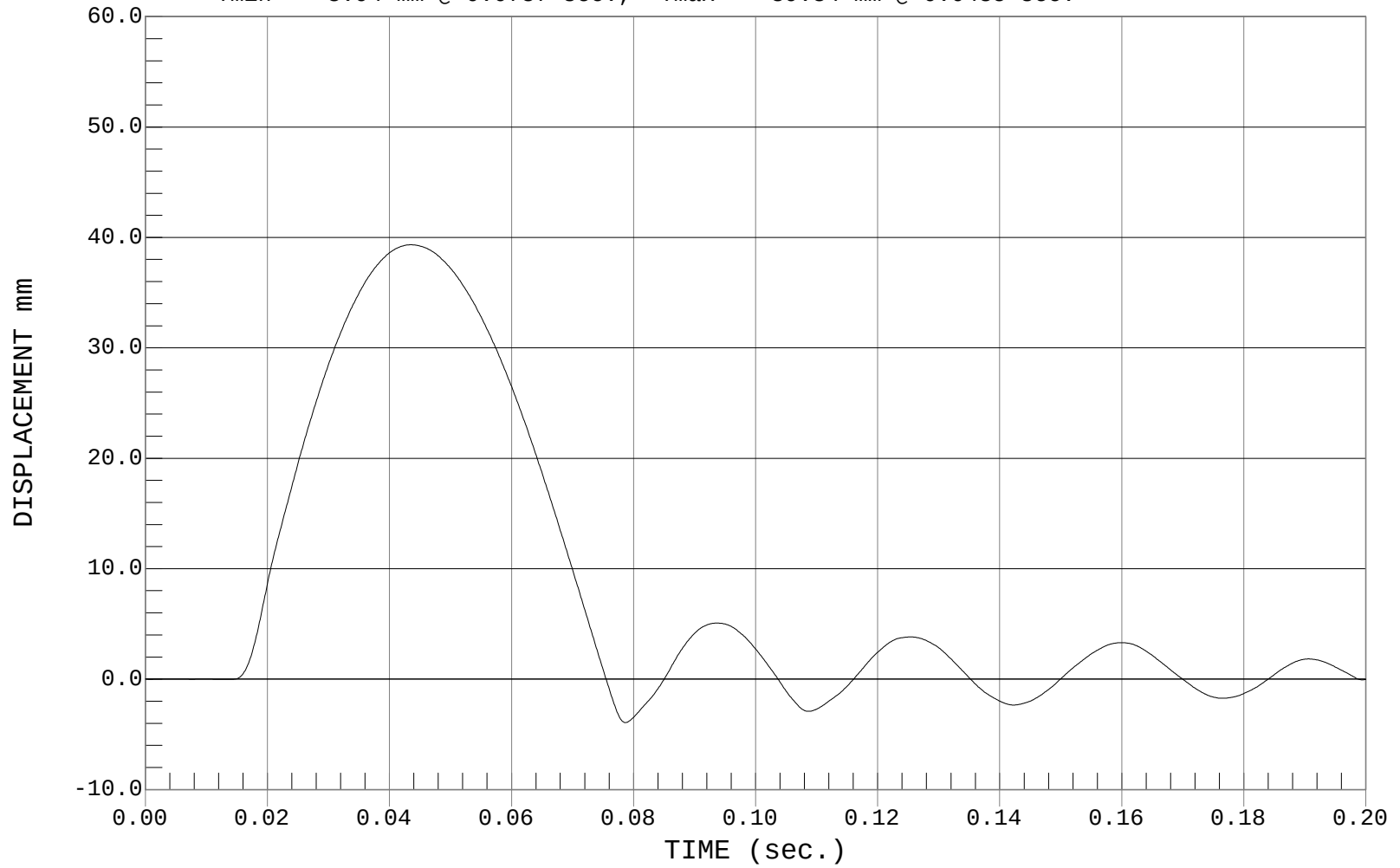
UPPER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-31-01
Speed: 9.84 FT/SEC, 3.00 M/SEC

— 1 DISPLACEMENT, D01604DF.D06

Ymin = -3.94 mm @ 0.0787 sec., Ymax = 39.34 mm @ 0.0435 sec.





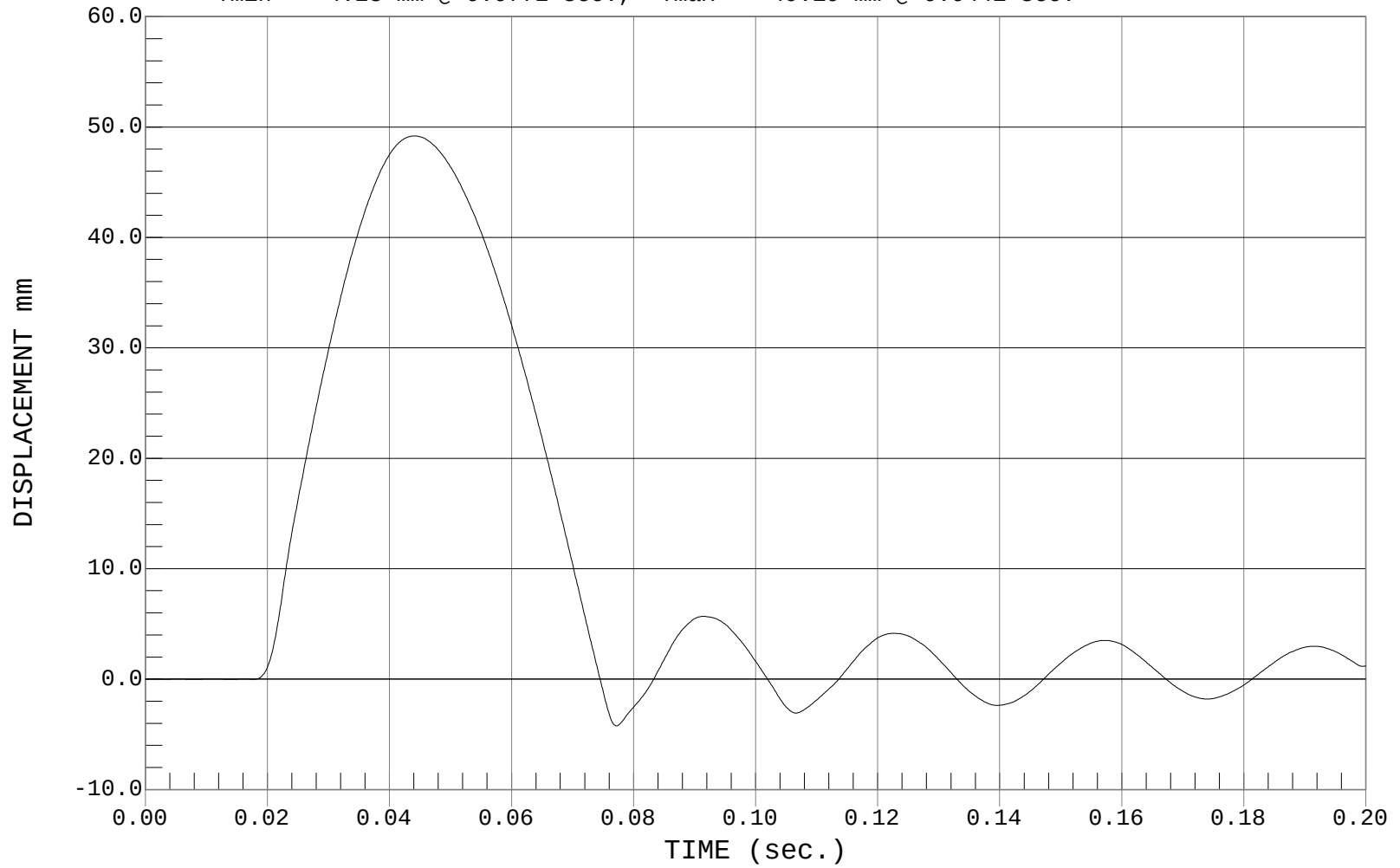
UPPER RIB DISPLACEMENT

Test Desc.: Dummy Calibration -
Component: Dummy #010

Test Date: 10-31-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

— 1 DISPLACEMENT, D01604DF.D07

Ymin = -4.23 mm @ 0.0772 sec., Ymax = 49.19 mm @ 0.0441 sec.





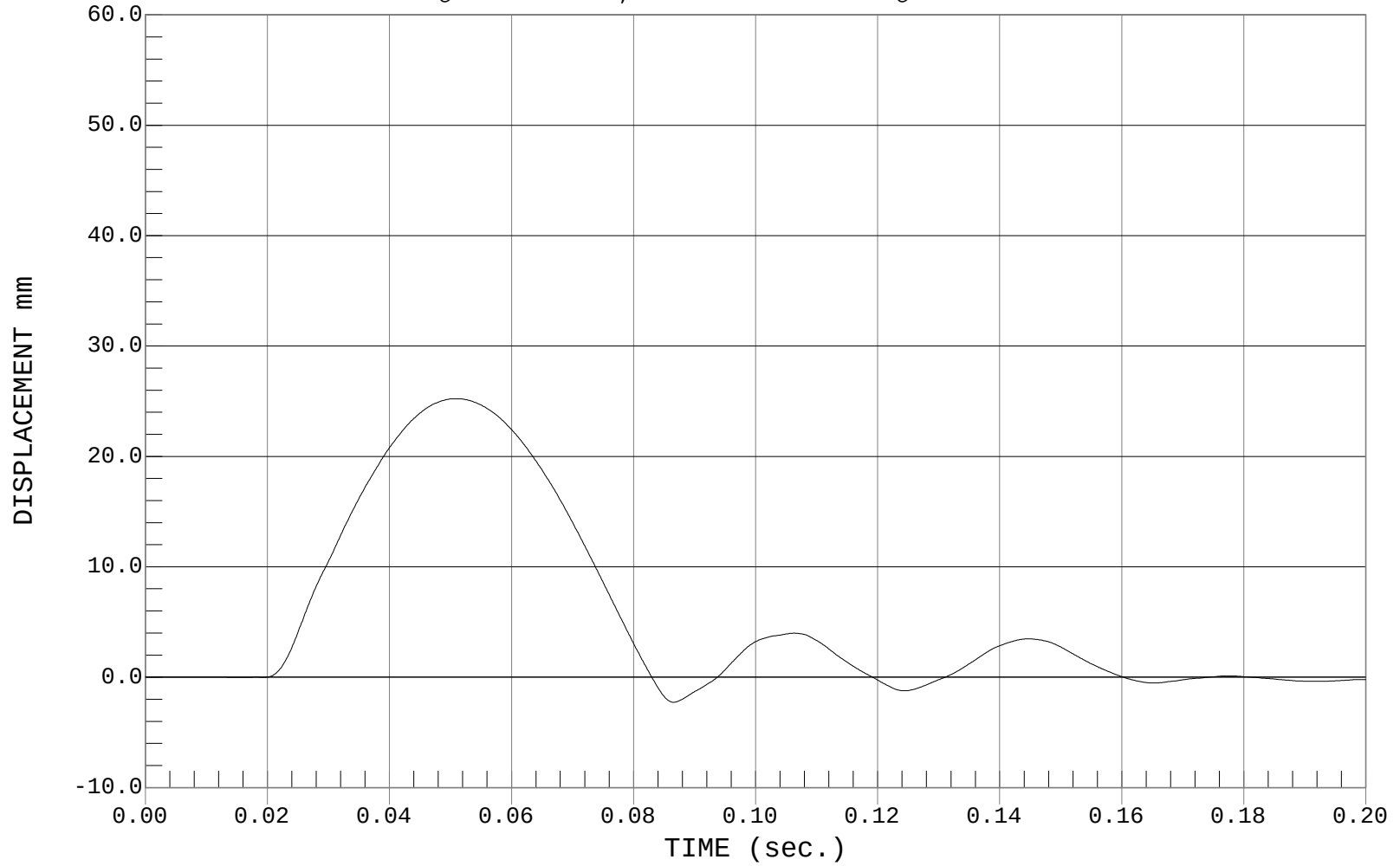
MIDDLE RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-31-01
Speed: 6.56 FT/SEC, 2.00 M/SEC

— 1 DISPLACEMENT, D01605DF.D05

Ymin = -2.27 mm @ 0.0865 sec., Ymax = 25.22 mm @ 0.0508 sec.





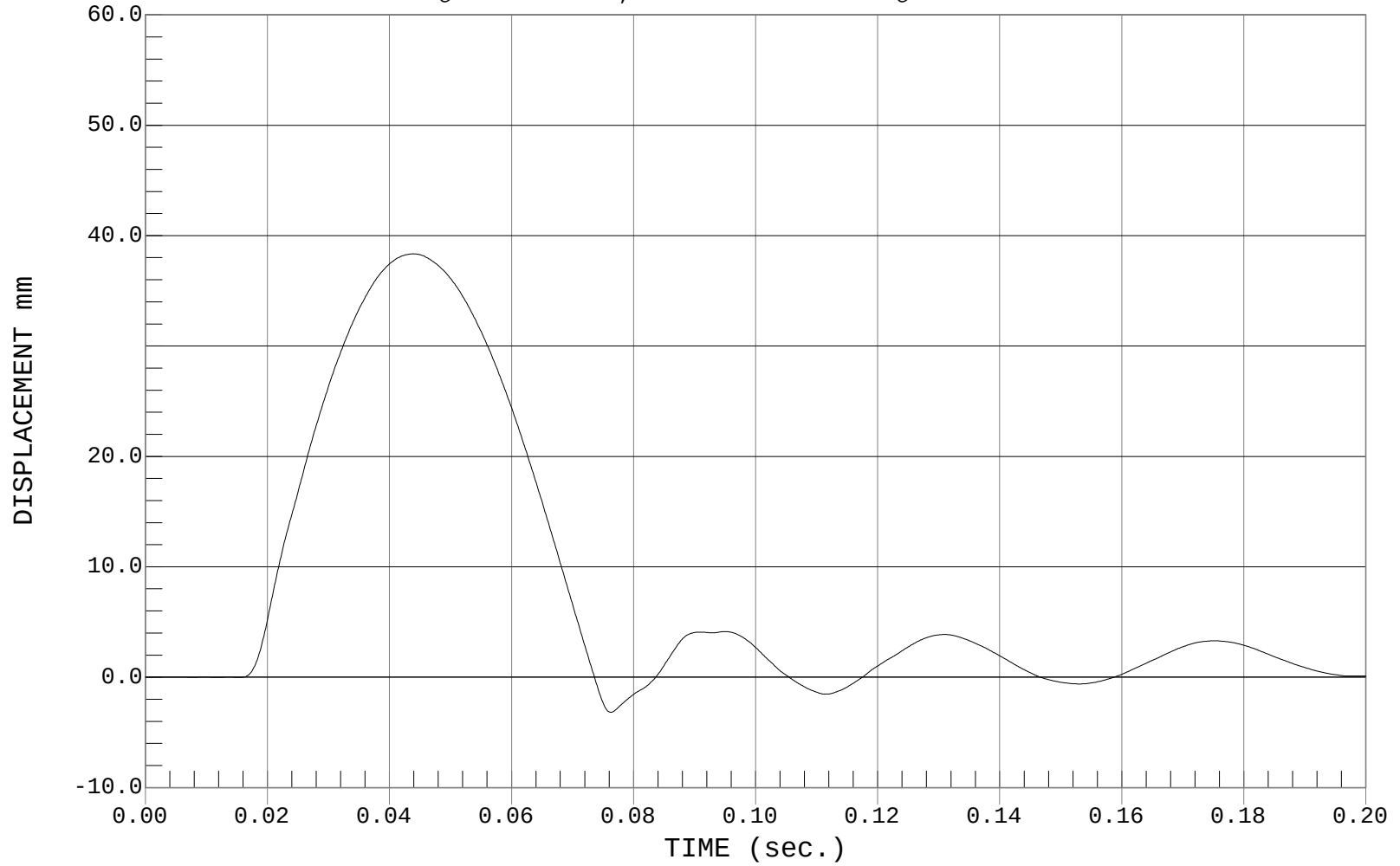
MIDDLE RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-31-01
Speed: 9.84 FT/SEC, 3.00 M/SEC

— 1 DISPLACEMENT, D01605DF.D06

Ymin = -3.19 mm @ 0.0763 sec., Ymax = 38.35 mm @ 0.0439 sec.





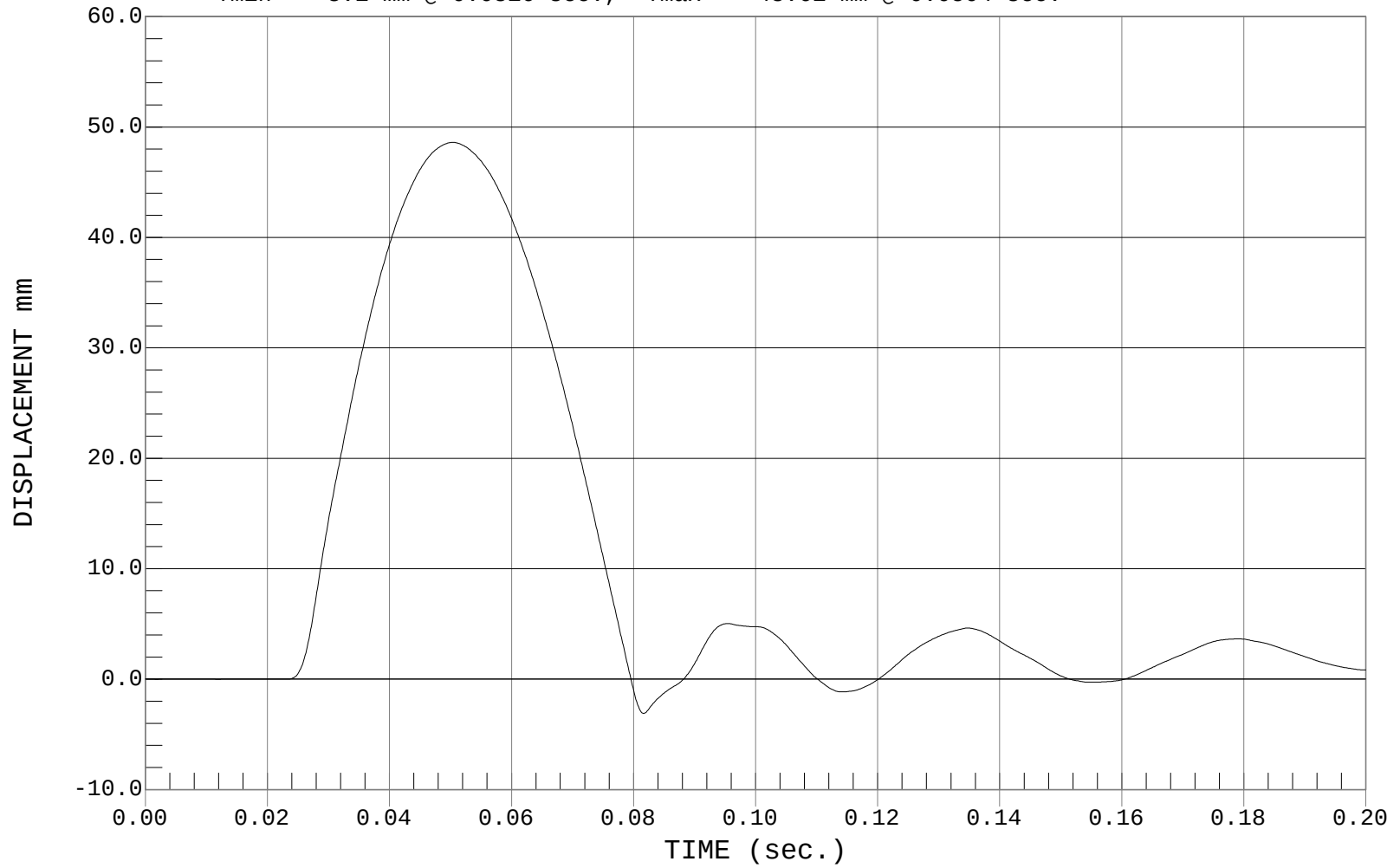
MIDDLE RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-31-01
Speed: 13.12 FT/SEC, 4.00 M/SEC

— 1 DISPLACEMENT, D01605DF.D07

Ymin = -3.1 mm @ 0.0816 sec., Ymax = 48.61 mm @ 0.0504 sec.





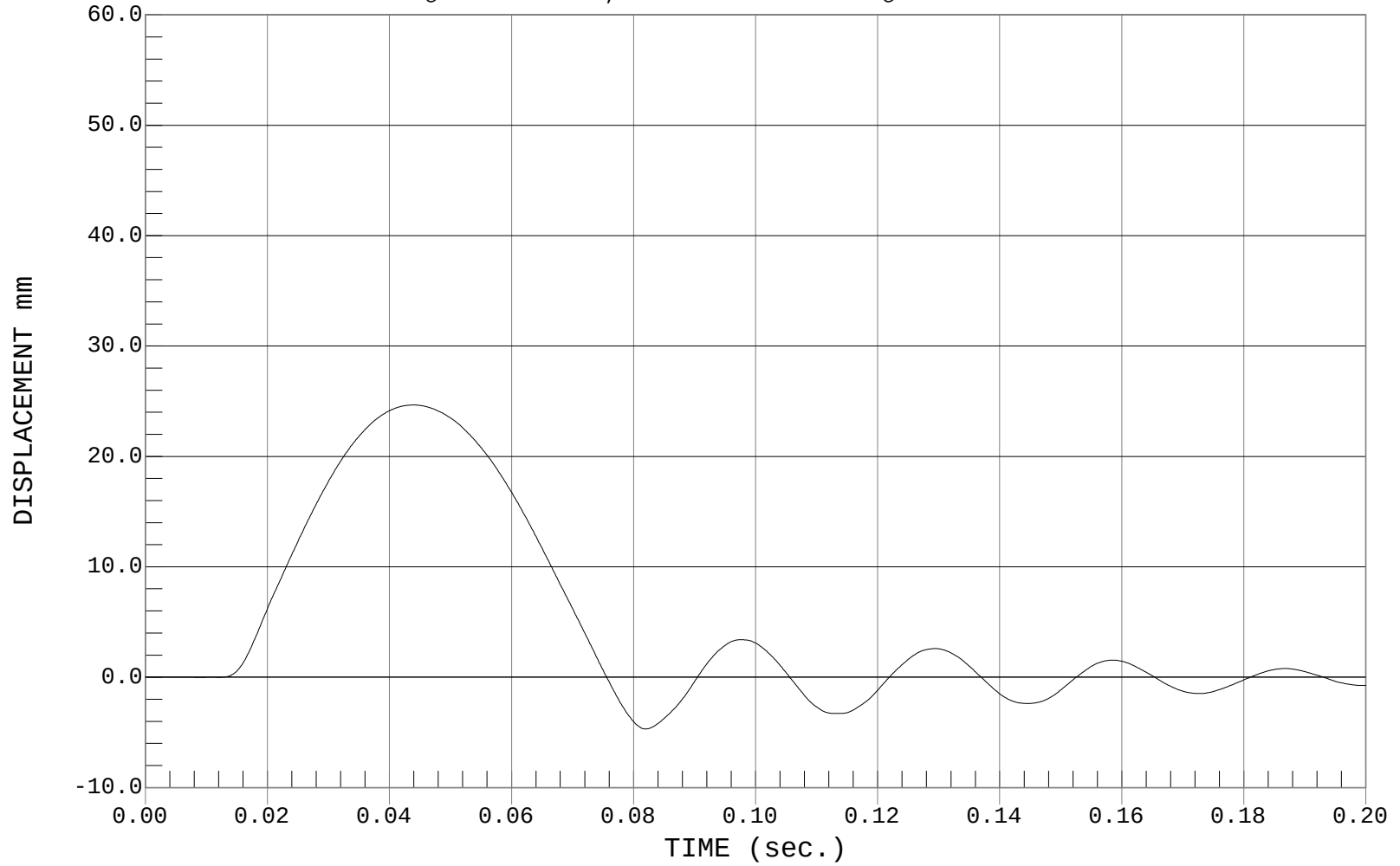
LOWER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-31-01
Speed: 6.56 FT/SEC, 2.00 M/SEC

— 1 DISPLACEMENT, D01606DF.D05

Ymin = -4.7 mm @ 0.0820 sec., Ymax = 24.67 mm @ 0.0439 sec.





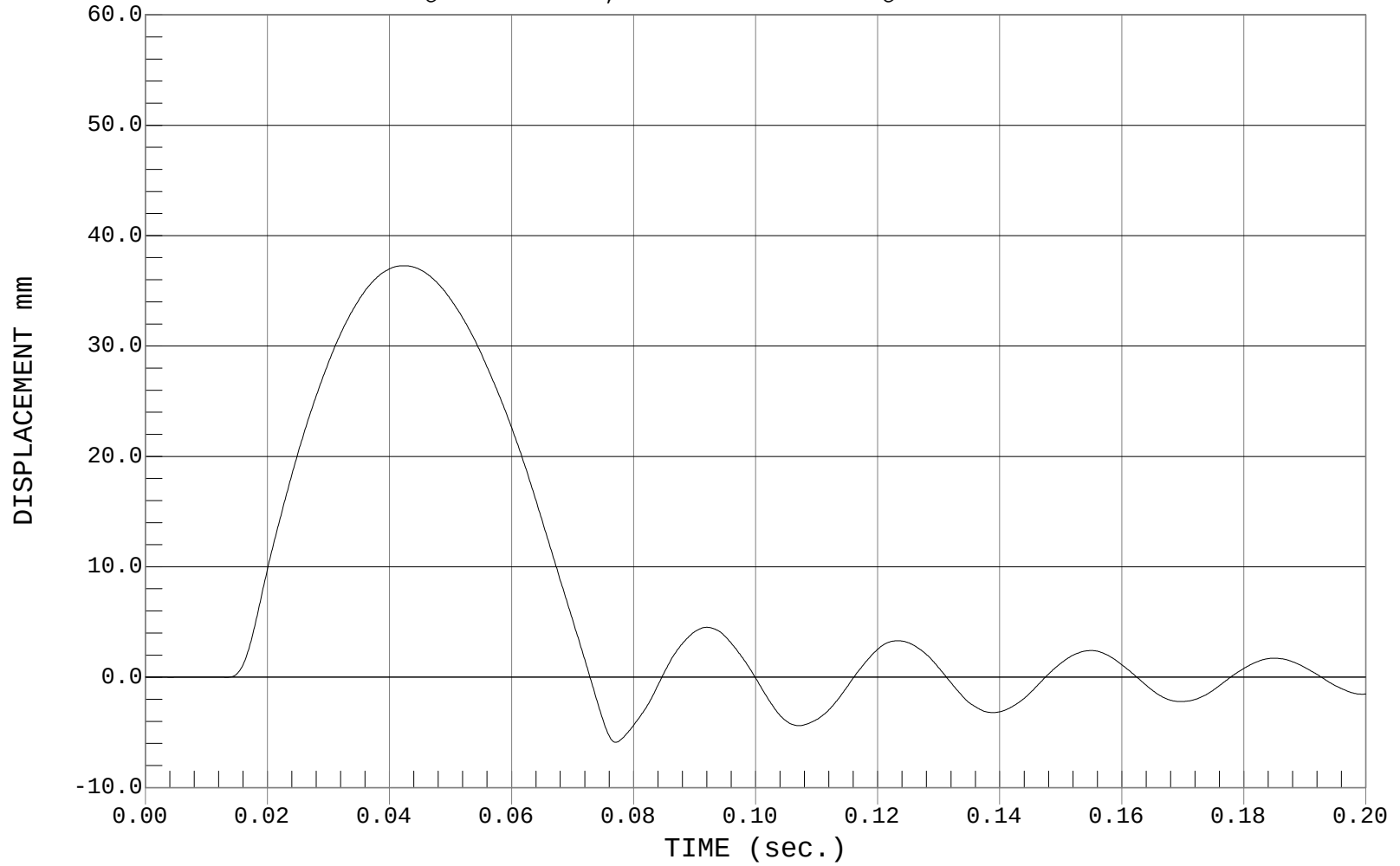
LOWER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-31-01
Speed: 9.84 FT/SEC, 3.00 M/SEC

— 1 DISPLACEMENT, D01606DF.D06

Ymin = -5.9 mm @ 0.0771 sec., Ymax = 37.28 mm @ 0.0423 sec.





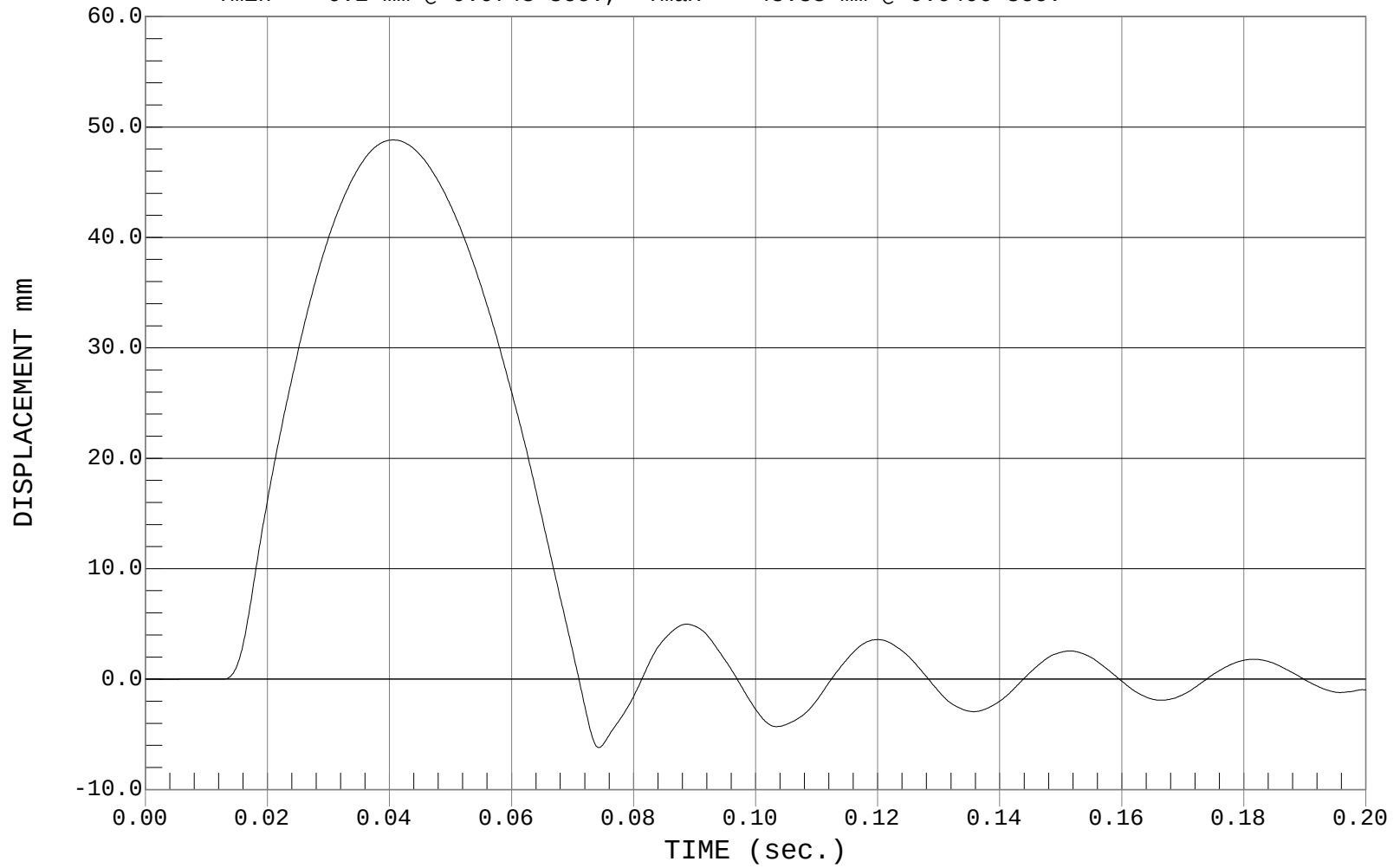
LOWER RIB DISPLACEMENT

Test Desc.: Dummy Calibration - Rib Module
Component: Dummy #010

Test Date: 10-31-01
Speed: 13.12 FT/SEC, 4.00 M/SEC

— 1 DISPLACEMENT, D01606DF.D07

Ymin = -6.2 mm @ 0.0743 sec., Ymax = 48.83 mm @ 0.0406 sec.



MGA RESEARCH CORPORATION
ABDOMEN TEST
EUROSID 2 DUMMY

Date: 11/5/01
Dummy Serial Number: 010
Test Number: D011607

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.9
Relative Humidity (%)	10 – 70	31
Probe Speed (m/s)	3.90 – 4.10	3.99
Maximum Impact Force	4.00 – 4.80 kN	4.75
Time of Maximum Force	10.60 – 13.00 ms	11.90
Maximum Total Abdomen Force	2.20 – 2.70 kN	2.21
Time of Max. Total Force	10.00 – 12.30 ms	11.50

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



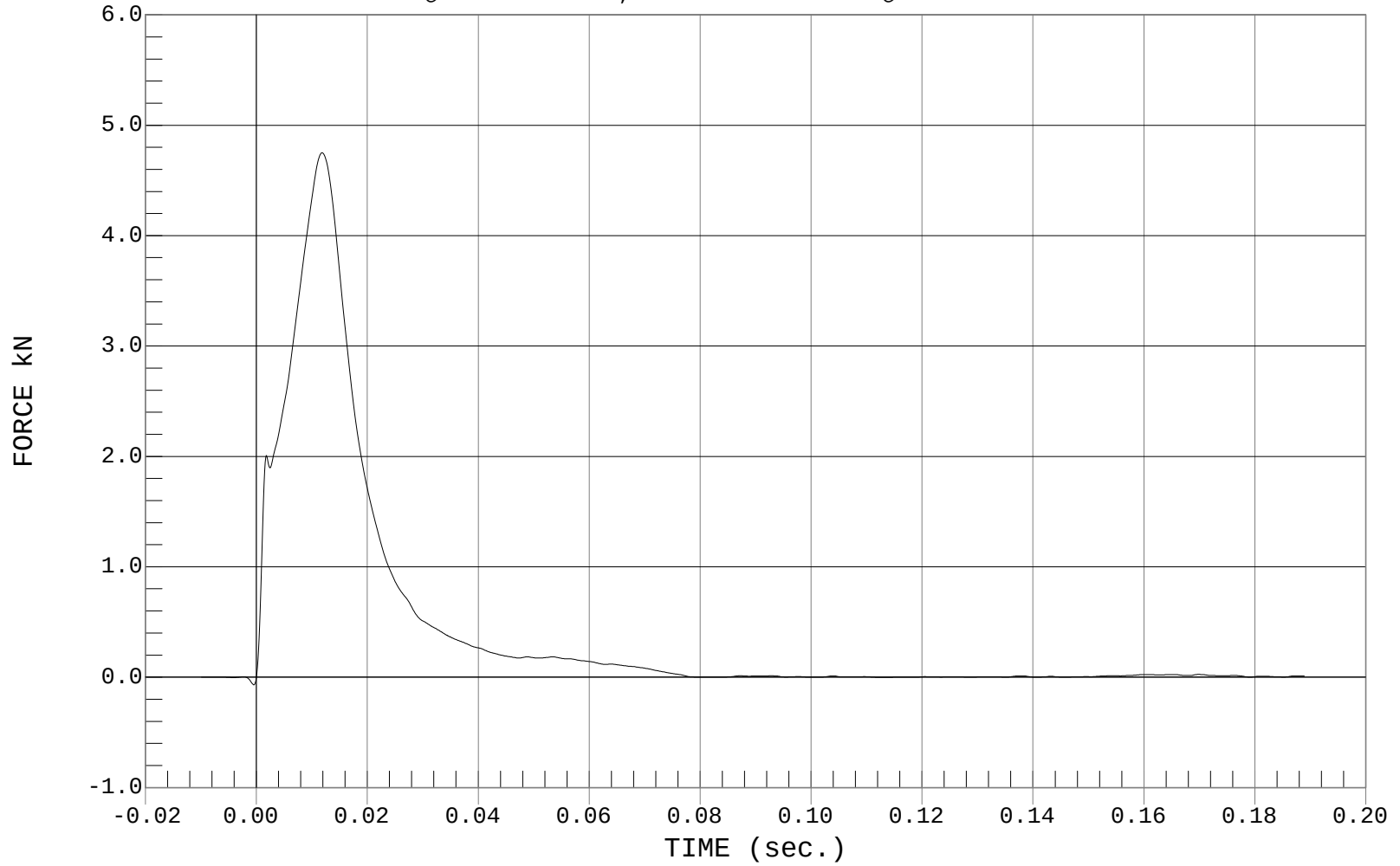
IMPACTOR FORCE

Test Desc.: Dummy Calibration -
Component: Dummy #010

Test Date: 11-05-01
Speed: 13.08 FT/SEC, 3.99 M/SEC

— 1 FORCE, D01607FT.F01

Ymin = -.07 kN @ -0.0005 sec., Ymax = 4.75 kN @ 0.0119 sec.





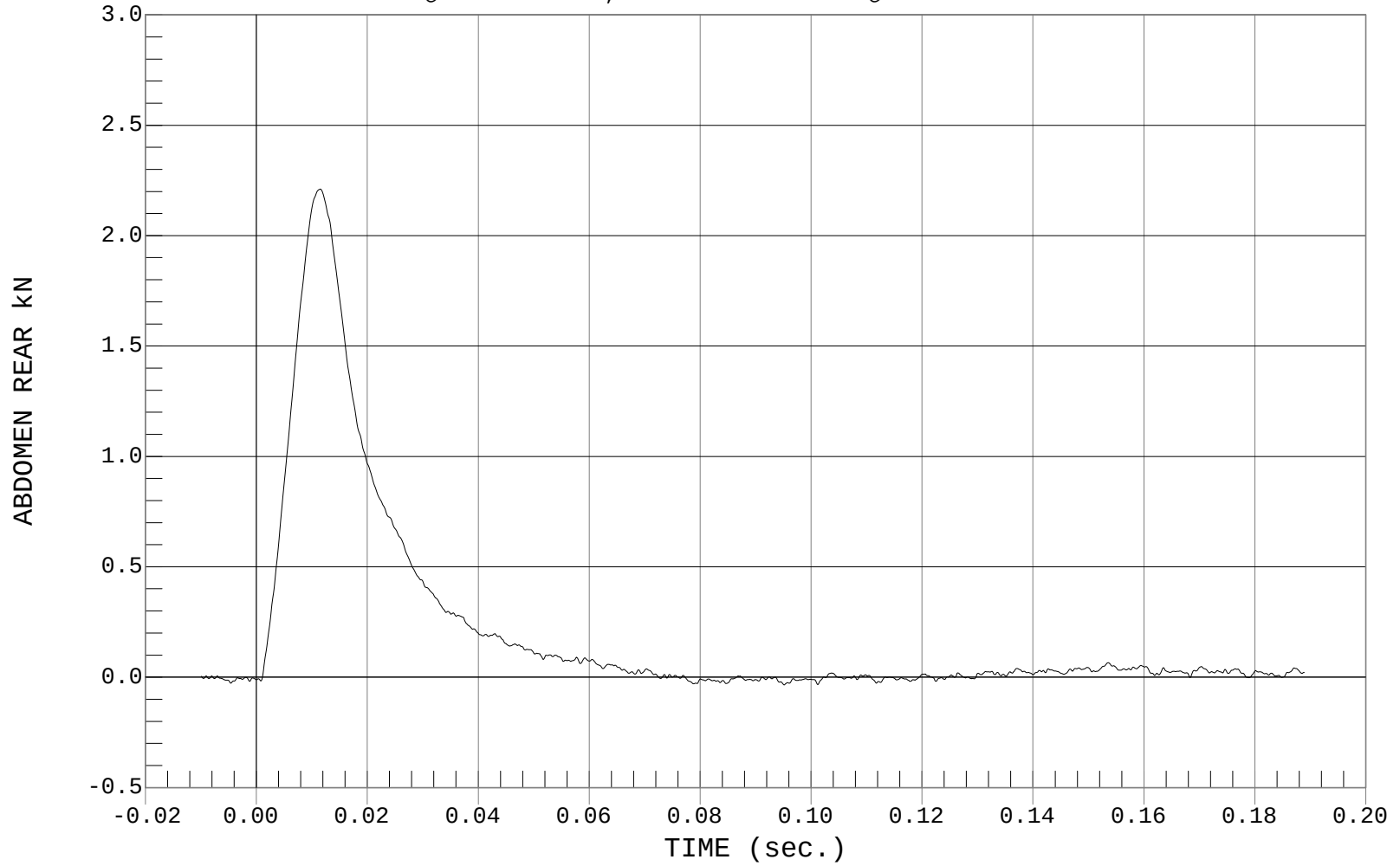
ABDOMEN FORCE

Test Desc.: Dummy Calibration -
Component: Dummy #010

Test Date: 11-05-01
Speed: 13.08 FT/SEC, 3.99 M/SEC

— 1 ABDOMEN REAR, D01607FT.F02

Ymin = -.03 kN @ 0.0952 sec., Ymax = 2.21 kN @ 0.0115 sec.



MGA RESEARCH CORPORATION
LUMBAR SPINE TEST
EUROSID 2 DUMMY

Date: 11/1/01
Dummy Serial Number: 010
Test Number: D011608

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.0 – 22.0	21.4
Relative Humidity (%)		10 – 70	51
Pendulum Speed		5.95 – 6.15	6.08
Pendulum Deceleration	10 msec	2.46 - 1.59 m/sec	-2.11
	20 msec	5.25 - 4.07 m/sec	-4.87
	25 msec	6.64 - 5.3 m/sec	-5.98
	30 msec	≥ -6.5 m/sec	-6.18
Maximum Flexion Angle		45.0 – 55.0 deg	52.3
Time of Max. Flexion Angle		39.0 – 53.0 ms	46.0
Maximum Angle Theta (A)		31.0 – 35.0 deg	32.9
Time of Max. Theta (A)		44.0 – 52.0 ms	45.8
Maximum Angle Theta (B)		28.32– 30.82 deg	29.90
Time of Max. Theta (B)		44.0 – 52.0 ms	45.6

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



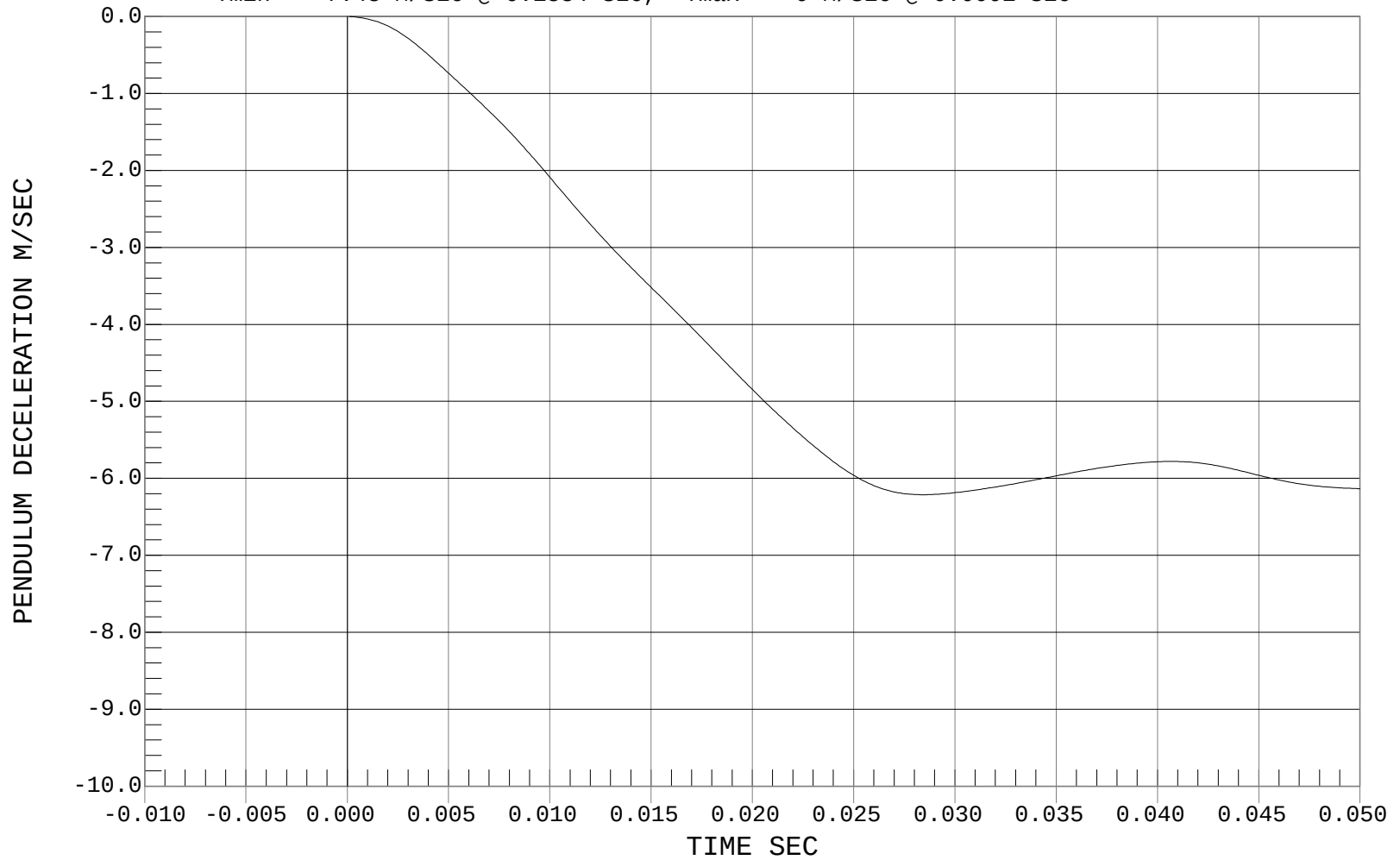
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Lumbar Flexion
Component: Dummy #010

Test Date: 11-01-01
Speed: 19.96 FT/SEC, 6.08 M/SEC

— 1 PENDULUM DECELERATION, D01608AI.V04

Ymin = -7.43 M/SEC @ 0.1384 SEC, Ymax = 0 M/SEC @ 0.0001 SEC





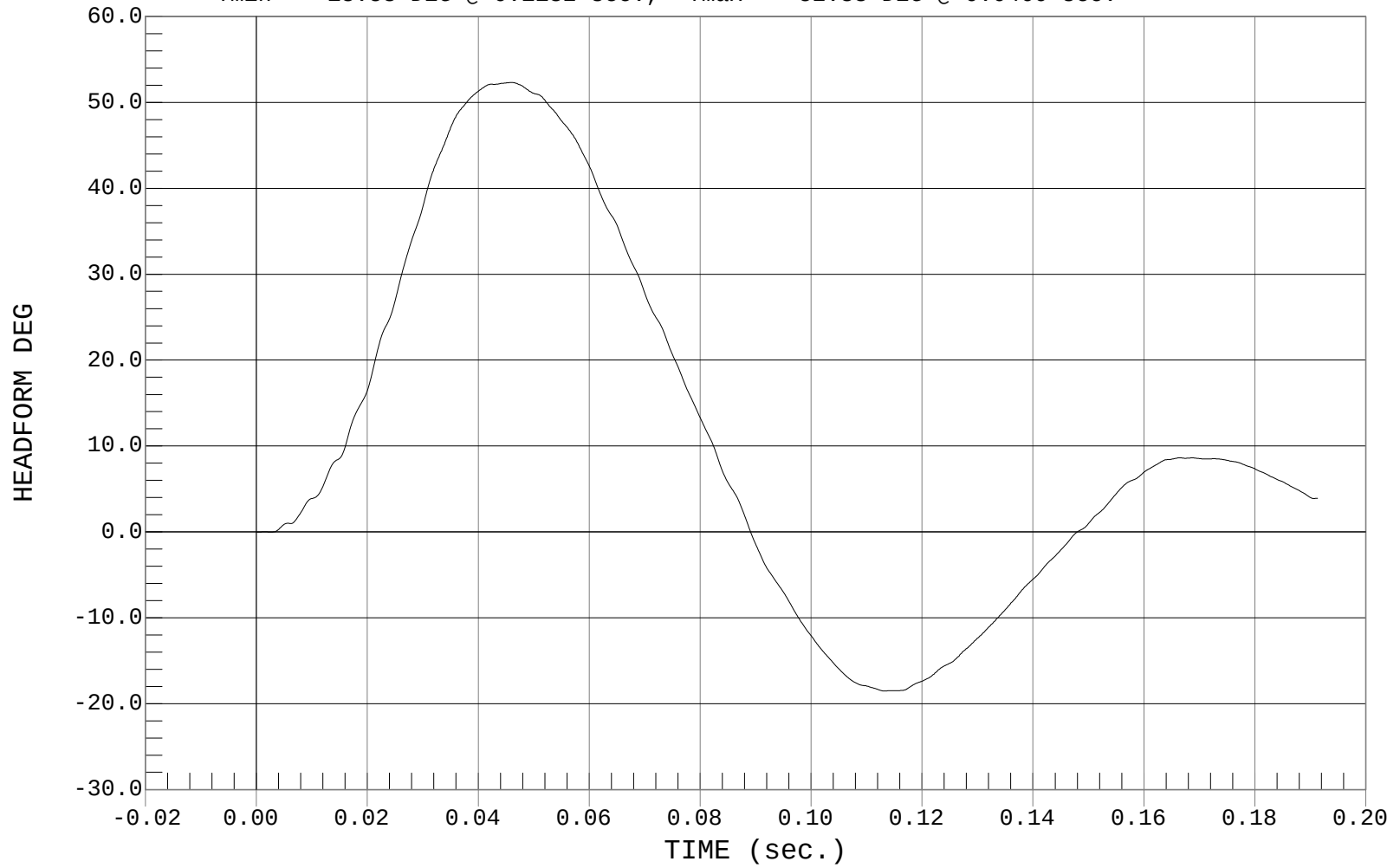
FLEXION ANGLE

Test Desc.: Dummy Calibration - Lumbar Flexion
Component: Dummy #010

Test Date: 11-01-01
Speed: 19.96 FT/SEC, 6.08 M/SEC

— 1 HEADFORM, D01608DT.D08

Ymin = -18.53 DEG @ 0.1132 sec., Ymax = 52.33 DEG @ 0.0460 sec.





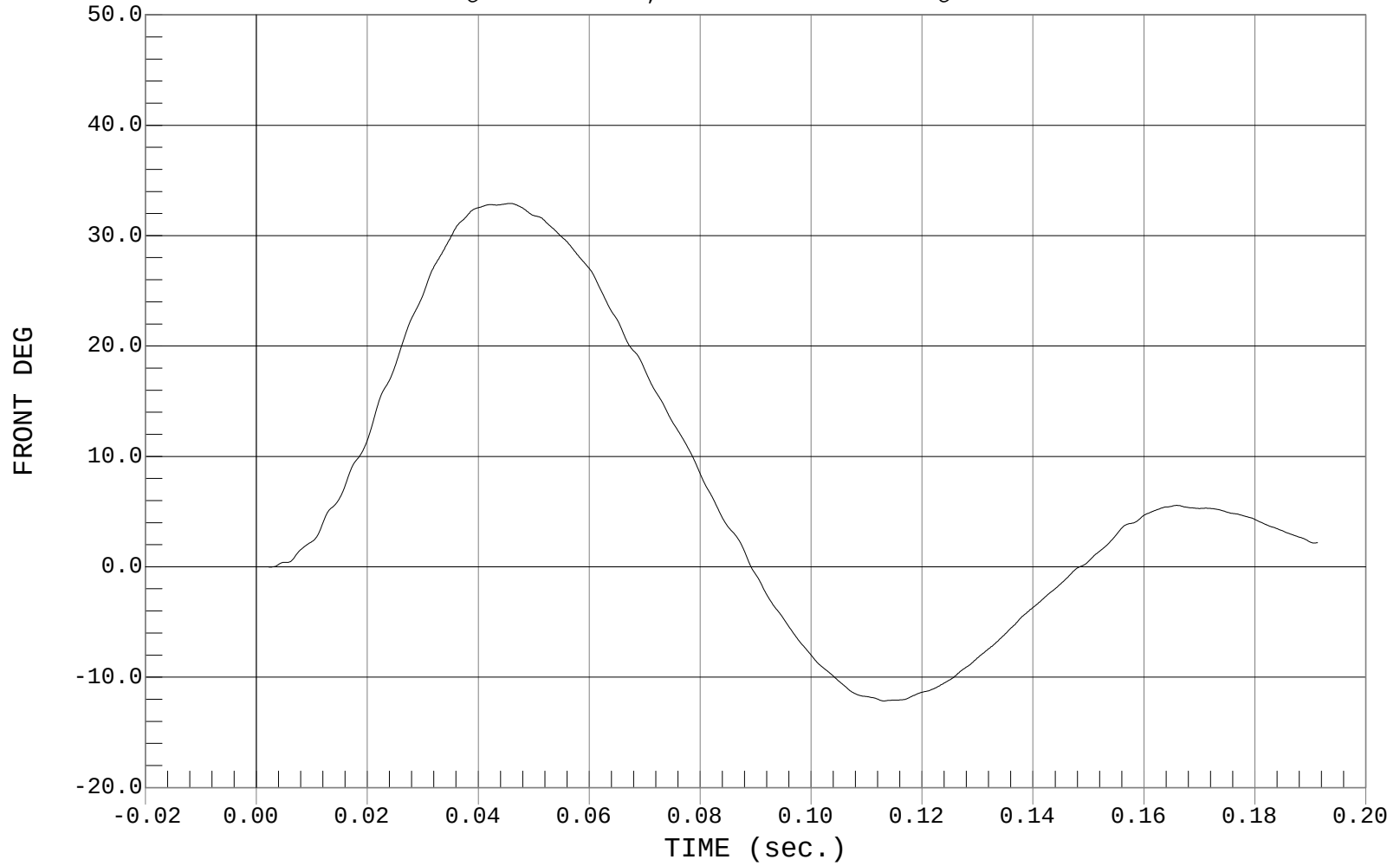
THETA A

Test Desc.: Dummy Calibration - Lumbar Flexion
Component: Dummy #010

Test Date: 11-01-01
Speed: 19.96 FT/SEC, 6.08 M/SEC

— 1 FRONT, D01608DT.D05

Ymin = -12.15 DEG @ 0.1131 sec., Ymax = 32.91 DEG @ 0.0458 sec.





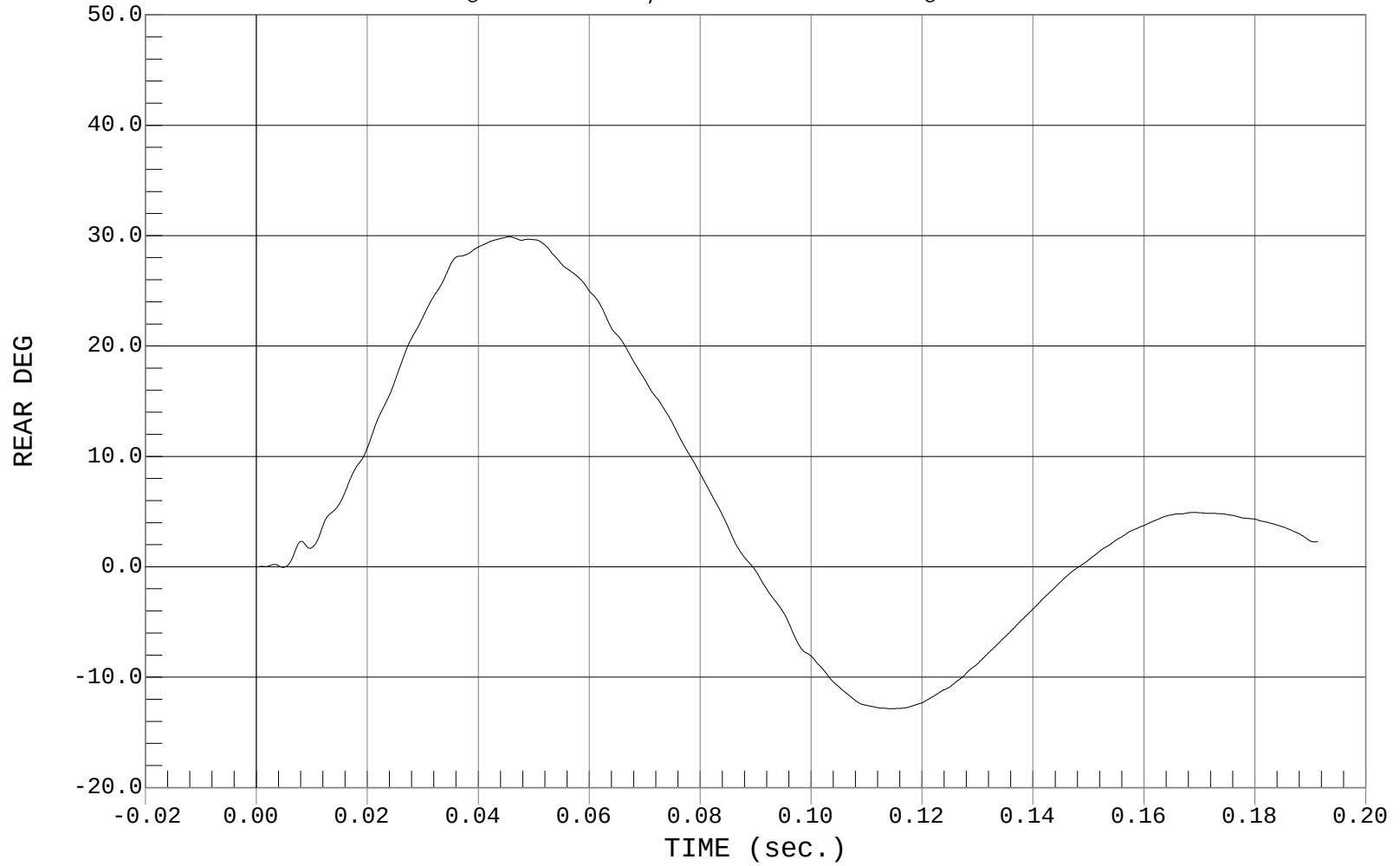
THETA B

Test Desc.: Dummy Calibration - Lumbar Flexion
Component: Dummy #010

Test Date: 11-01-01
Speed: 19.96 FT/SEC, 6.08 M/SEC

— 1 REAR, D01608DT.D06

Ymin = -12.85 DEG @ 0.1144 sec., Ymax = 29.9 DEG @ 0.0456 sec.



MGA RESEARCH CORPORATION
PELVIS TEST
EUROSID 2 DUMMY

Date: 11/5/01
Dummy Serial Number: 010
Test Number: D011609

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.9
Relative Humidity (%)	10 – 70	31
Pendulum Speed	6.20 – 6.30 m/s	6.23
Maximum Impactor Force	9.80 – 12.20 kN	10.96
Time of Max. Impactor Force	9.50 – 12.50 ms	11.70
Maximum Pubic Force	2.65 – 3.35 kN	3.30
Time of Max. Pubic Force	10.00 – 13.00 ms	11.80

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____



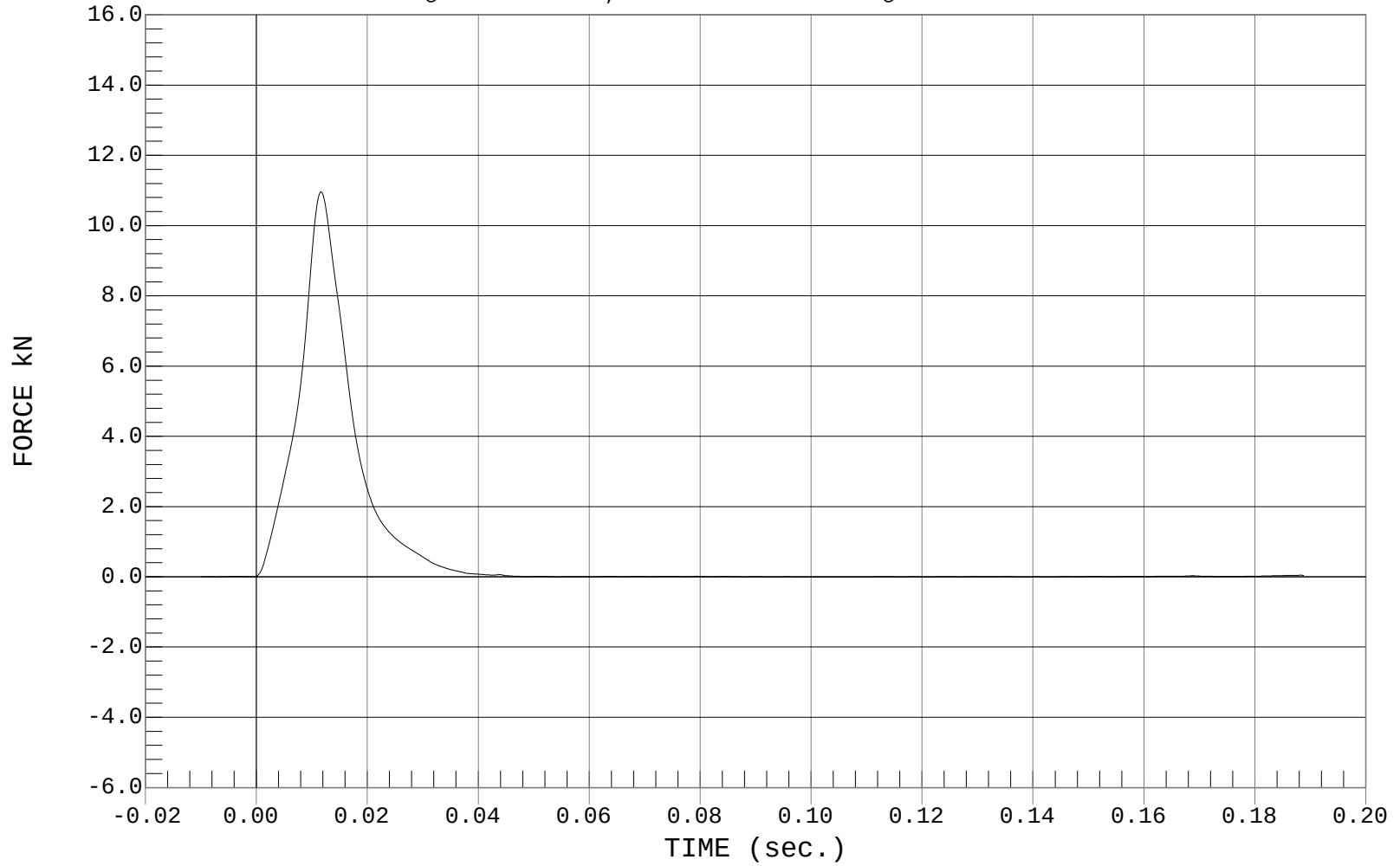
IMPACTOR FORCE

Test Desc.: Dummy Calibration - Pelvis Impact
Component: Dummy #010

Test Date: 11-05-01
Speed: 20.44 FT/SEC, 6.23 M/SEC

— 1 FORCE, D01609FT.F01

Ymin = -.01 kN @ 0.1042 sec., Ymax = 10.96 kN @ 0.0117 sec.





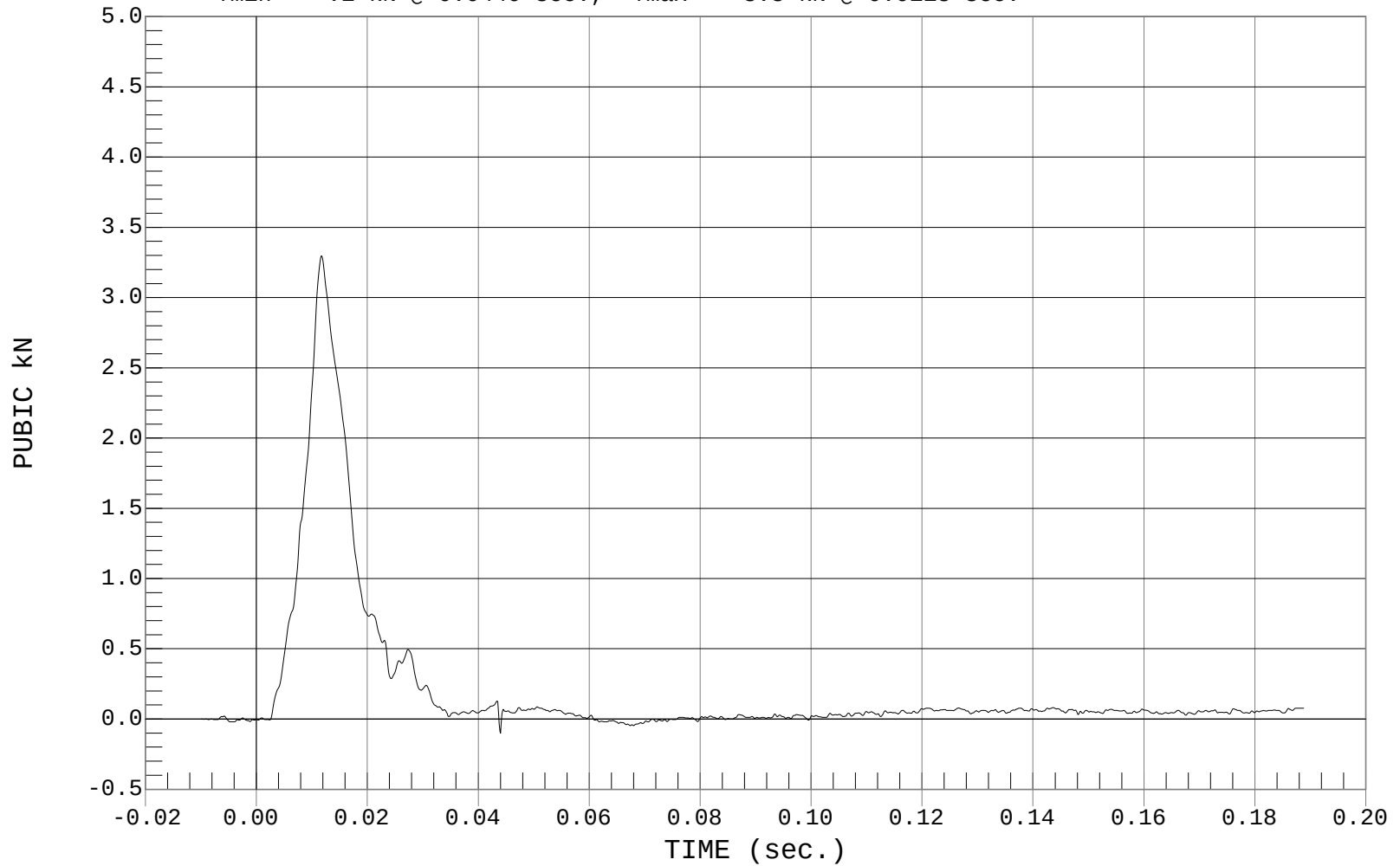
PUBIC FORCE

Test Desc.: Dummy Calibration - Pelvis Impact
Component: Dummy #010

Test Date: 11-05-01
Speed: 20.44 FT/SEC, 6.23 M/SEC

— 1 PUBIC, D01609FT.F02

Ymin = -.1 kN @ 0.0440 sec., Ymax = 3.3 kN @ 0.0118 sec.



APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

DUMMY AND VEHICLE CALIBRATION DATA

	INSTRUMENTS FOR LEFT FRONT DUMMY NO. 009		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X Accelerometer	J14006	Endevco	10/2/01
Head Y Accelerometer	J13628	Endevco	10/2/01
Head Z Accelerometer	J13652	Endevco	10/2/01
Upper Neck Load Cell	105	FTSS	4/30/01
Lower Neck Load Cell	110	FTSS	5/4/01
Shoulder Force Load Cell	119	FTSS	4/24/01
Upper Spine X Accelerometer	J10730	Endevco	10/2/01
Upper Spine Y Accelerometer	J11014	Endevco	10/2/01
Upper Spine Z Accelerometer	J11625	Endevco	10/2/01
Upper Rib Y Accelerometer	AGRW3	Endevco	6/20/01
Mid Rib Y Accelerometer	AHY71	Endevco	6/20/01
Lower Rib Y Accelerometer	AMPY0	Endevco	6/20/01
Upper Rib Displacement	009	Honeywell	5/22/01
Mid Rib Displacement	009	Honeywell	5/22/01
Lower Rib Displacement	009	Honeywell	5/22/01
Lower Spine X Accelerometer	J13927	Endevco	10/2/01
Lower Spine Y Accelerometer	J13941	Endevco	10/2/01
Lower Spine Z Accelerometer	J13984	Endevco	10/2/01
Torso Load Cell	122	FTSS	4/12/01
T-12 Load Cell	103	FTSS	3/27/01
Front Abdomen Load Cell	122	FTSS	4/26/01
Mid Abdomen Load Cell	123	FTSS	4/26/01
Rear Abdomen Load Cell	124	FTSS	4/26/01
Pubic Symphysis Load Cell	115	Denton	3/29/01
Pelvis X Accelerometer	AHTF1	Endevco	10/2/01
Pelvis Y Accelerometer	AJ9D6	Endevco	10/2/01
Pelvis Z Accelerometer	AJ9D8	Endevco	10/2/01
Right Femur Load Cell	135	FTSS	4/18/01
Left Femur Load Cell	136	FTSS	4/19/01
Lumbar Load Cell	104	FTSS	4/24/01

DUMMY AND VEHICLE CALIBRATION DATA (Continued)

	INSTRUMENTS FOR LEFT REAR DUMMY NO. 010		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X Accelerometer	J20392	Endevco	5/31/01
Head Y Accelerometer	ALDD6	Endevco	5/31/01
Head Z Accelerometer	AGT18	Endevco	5/31/01
Upper Neck Load Cell	106	FTSS	3/27/01
Shoulder Force Load Cell	120	FTSS	4/24/01
Upper Spine X Accelerometer	AN8D5	Endevco	7/3/01
Upper Spine Y Accelerometer	J13709	Endevco	7/3/01
Upper Spine Z Accelerometer	AN8D2	Endevco	7/3/01
Upper Rib Y Accelerometer	J13653	Endevco	6/20/01
Mid Rib Y Accelerometer	J13649	Endevco	6/20/01
Lower Rib Y Accelerometer	J13713	Endevco	6/20/01
Upper Rib Displacement	010	Honeywell	5/22/01
Mid Rib Displacement	010	Honeywell	5/22/01
Lower Rib Displacement	010	Honeywell	5/22/01
Lower Spine X Accelerometer	AH1F9	Endevco	8/21/01
Lower Spine Y Accelerometer	AH0F0	Endevco	8/21/01
Lower Spine Z Accelerometer	AH097	Endevco	8/21/01
Torso Load Cell	123	FTSS	4/12/01
T-12 Load Cell	N/A	N/A	N/A
Front Abdomen Load Cell	119	FTSS	4/26/01
Mid Abdomen Load Cell	120	FTSS	4/26/01
Rear Abdomen Load Cell	121	FTSS	4/26/01
Pubic Symphysis Load Cell	144	Denton	10/10/01
Pelvis X Accelerometer	AH0C3	Endevco	8/30/01
Pelvis Y Accelerometer	AHT12	Endevco	8/30/01
Pelvis Z Accelerometer	AHTN3	Endevco	8/30/01
Right Femur Load Cell	137	FTSS	4/18/01
Left Femur Load Cell	138	FTSS	4/18/01
Lumbar Load Cell	105	FTSS	5/7/01

DUMMY AND VEHICLE CALIBRATION DATA (Continued)

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Moving Barrier CG X	D11-F01	Entran	5/30/01
Moving Barrier CG Y	J10-E18	Entran	8/21/01
Moving Barrier CG Z	I25-J09	Entran	5/25/01
Moving Barrier Rear Axle X	E03-H06	Entran	6/7/01
Moving Barrier Rear Axle Y	F11-G09	Entran	9/27/01
Left Mid A-Post Y	C06-G01	Entran	5/25/01
Left Lower A-Post Y	D11-F09	Entran	5/31/01
Left Mid B-Post Y	I12-F02	Entran	10/10/01
Left Lower B-Post Y	I12-F07	Entran	10/10/01
Rear Floorpan Above Axle X	A08-A11	Entran	8/29/01
Rear Floorpan Above Axle Y	H07-F07	Entran	9/27/01
Rear Floorpan Above Axle Z	I25-F05	Entran	6/11/01
Driver Seat Track Y	I12-F10	Entran	10/10/01
Right Side Sill at Front Seat X	F04-N15	Entran	6/25/01
Right Side Sill at Front Seat Y	F04-N09	Entran	6/22/01
Right Side Sill at Front Seat Z	H14-N12	Entran	9/12/01
Right Side Sill at Rear Seat X	J10-E03	Entran	6/19/01
Right Side Sill at Rear Seat Y	K19-A11	Entran	8/21/01
Right Side Sill at Rear Seat Z	G13-F10	Entran	6/01/01
Left Side Sill at Front Seat Y	G03-N07	Entran	7/30/01
Left Side Sill at Rear Seat Y	I12-F13	Entran	10/10/01
Vehicle CG X	E13-D06	Entran	8/8/01
Vehicle CG Y	F04-N04	Entran	6/22/01
Vehicle CG Z	I12-F05	Entran	10/10/01

DUMMY AND VEHICLE CALIBRATION DATA (Continued)

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Left Front Door @ Mid Rib	G03-N06	Entran	8/07/01
Left Front Door @ Pelvis	I12-F01	Entran	10/10/01
Left Front Door @ Arm	I25-F01	Entran	6/19/01
Left Rear Door @ Mid Rib	I12-F03	Entran	10/10/01
Left Rear Door @ Pelvis	I12-F11	Entran	10/10/01
Left Rear Door @ Knee	I12-F04	Entran	10/10/01
Left Rear Door @ Arm	I12-F12	Entran	10/10/01
Right Rear Occupant Compartment	K11-G07	Entran	3/21/01

Note: All Endevco accelerometers are Model No. 7264-2000

All Entran accelerometers are Model No. EGE-72

APPENDIX E

PROCEDURE FOR ES-2 POSITIONING

Installation of the Side Impact Dummy (recommended practice)

1. GENERAL

- 1.1 The dummy to be used for the following installation procedure is described in Annex 6 to this regulation.
- 1.2 Adjust the knee joints so that they just support the leg when it is extended horizontally (1 to 2 g).
- 1.3 Clothe the dummy in form fitting cotton stretch mid-calf length pants. Each foot is equipped with a shoe.

2. INSTALLATION

- 2.1 Place the dummy in the outboard front seat of the impact side as described in the test specifications.
- 2.2 The mid-sagittal plane of the dummy shall coincide with the centerplane of the occupant (as determined according to Annex 3, paragraph 2.8) with a tolerance of 2°.
- 2.3 The pelvis of the dummy shall be positioned according to the following:
 - 2.3.1 The pelvis pitch angle shall be 20.0° +/- 2.5°.
 - 2.3.2 A line passing through the dummy H-points shall pass through an imaginary circle in the mid-sagittal plane of the dummy. This circle has a radius of 10 mm and is located 20 mm horizontally forward and 5 mm vertically above the reference H-point, determined by the 3D H-point machine.
- 2.4 The upper torso of the dummy shall be positioned according to the following:
 - 2.4.1 The upper torso shall be bent forward and then laid back against the seat back. The shoulder of the dummy shall be set fully rearward.
 - 2.4.2 The torso reference line pitch angle shall be 25.0° +/- 2.5°. The torso reference line is defined as the thoracic spine center line.
- 2.5 The arms shall be positioned in such a way that the angle between the projection of the arm centerline on the mid-sagittal plane of the dummy and the torso reference line is 40° +/- 5°.

- 2.6 For the driver's seating position, without inducing pelvis or torso movement, place the right foot of the dummy on the undepressed accelerator pedal with the heel resting as far forward as possible on the floorpan. Set the left foot perpendicular to the lower leg with the heel resting on the floorpan in the same lateral line as the right heel. Set the knees of the dummy such that their outside surfaces are 150 ± 10 mm from the plane of symmetry of the dummy. If possible, within these constraints, place the thighs of the dummy in contact with the seat cushion.
- 2.7 For other seating positions, without inducing pelvis or torso movement, place the heels of the dummy as far forward as possible on the floorpan without compressing the seat cushion more than the compression due to the weight of the leg. Set the knees of the dummy such that their outside surfaces are 150 ± 10 mm from the plane of symmetry of the dummy.

APPENDIX F
ES-2 PEAK RESPONSES

PASSENGER (ES-2) PEAK RESPONSE TABLE

Location	Peak Values				
				2001 LeSaber 10/5/01	
	Class	Axis	Units	Peak	Time
Head	1000	X	G	-23.0	63
	1000	Y	G	58.1	54
	1000	Z	G	15.0	49
	1000	RES	G	58.9	54
Head Injury Criteria (HIC)				220	
T1				46.4	
T2				62.9	
Upper Neck Force	1000	X	N	-507	63
	1000	Y	N	-513	56
	1000	Z	N	-1314	57
	1000	RES	N	1448	60
Upper Neck Moment	600	X	Nm	-67.4	53
	600	Y	Nm	-58.6	56
	600	Z	Nm	30.2	62
	600	RES	Nm	89.0	55
Lower Neck Force	1000	X	N	625	80
	1000	Y	N	1232	55
	1000	Z	N	-1372	57
	1000	RES	N	1820	57
Lower Neck Moment	600	X	Nm	65.8	56
	600	Y	Nm	90.7	65
	600	Z	Nm	35.0	79
	600	RES	Nm	98.3	64
Shoulder Force	1000	X	N	1890	35
	1000	Y	N	2412	35
	1000	Z	N	1480	52

PASSENGER (ES-2) PEAK RESPONSE TABLE (CONTINUED)

Location	Peak Values				
				2001 LeSaber 10/5/01	
	Class	Axis	Units	Peak	Time
Upper Spine	180	X	G	-18.0	35
	180	Y	G	45.6	48
	180	Z	G	8.0	62
	180	Res	G	46.3	48
Lower Spine	180	X	G	-18.8	37
	180	Y	G	67.0	43
	180	Z	G	-10.4	48
	180	Res	G	68.2	45
Upper Rib	180	Y	G	89.5	34
Mid Rib	180	Y	G	61.9	43
Lower Rib	180	Y	G	126.1	37
Upper Rib Deflection	180	Y	mm	-13.0	54
Mid Rib Deflection	180	Y	mm	-4.0	88
Lower Rib Deflection	180	Y	mm	-18.7	43
Upper Rib VC	180	Y	m/sec	0.12	44
Mid Rib VC	180	Y	m/sec	0.0	
Lower Rib VC	180	Y	m/sec	0.23	40
Torso Force	600	X	N	833	76
	600	Y	N	609	46
Torso Moment	600	Y	Nm	-9.2	52
	600	Z	Nm	-16.0	86
T12 Force	600	X	N	no load cell	
	600	Y	N		
T12 Moment	600	X	Nm	no load cell	
	600	Y	Nm		

PASSENGER (ES-2) PEAK RESPONSE TABLE (CONTINUED)

Location	Peak Values				
				2001 LeSaber 10/5/01	
	Class	Axis	Units	Peak	Time
Abdomen Front Force	600	Y	N	1383	46
Abdomen Mid Force	600	Y	N	1170	44
Abdomen Rear Force	600	Y	N	571	44
Abdomen Summed Force	600	Y	N	3110	46
Pubic Symphysis Force	600	Y	N	-4038	39
Right Femur Force	600	X	N	503	64
	600	Y	N	-1053	39
	600	Z	N	1309	37
	600	RES	N	1540	39
Right Femur Moment	600	X	Nm	148.3	37
	600	Y	Nm	50.8	39
	600	Z	Nm	-45.8	42
	600	RES	Nm	-153.5	37
Left Femur Force	600	X	N	-369	100
	600	Y	N	1340	38
	600	Z	N	-12956	71
	600	RES	N	12959	71
Left Femur Moment	600	X	Nm	128.7	39
	600	Y	Nm	63.8	43
	600	Z	Nm	-42.7	101
	600	RES	Nm	-134.3	39
Pelvis	1000	X	G	-43.7	38
	1000	Y	G	73.4	38
	1000	Z	G	-15.0	50

DRIVER (ES-2) PEAK RESPONSE TABLE

Location	Peak Values				
				2001 LeSaber 10/5/01	
	Class	Axis	Units	Peak	Time
Head	1000	X	G	-22.0	56
	1000	Y	G	209.5	47
	1000	Z	G	38.9	46
	1000	RES	G	211.9	47
Head Injury Criteria (HIC)				712	
T1				46.0	
T2				49.3	
Upper Neck Force	1000	X	N	-474	53
	1000	Y	N	866	45
	1000	Z	N	1475	46
	1000	RES	N	1716	46
Upper Neck Moment	600	X	Nm	-59.3	46
	600	Y	Nm	44.9	74
	600	Z	Nm	42.5	66
	600	RES	Nm	62.9	43
Lower Neck Force	1000	X	N	-423	54
	1000	Y	N	1272	44
	1000	Z	N	1027	46
	1000	RES	N	1602	45
Lower Neck Moment	600	X	Nm	183.5	47
	600	Y	Nm	80.3	62
	600	Z	Nm	34.2	64
	600	RES	Nm	186.6	47
Shoulder Force	1000	X	N	375	40
	1000	Y	N	1083	29
	1000	Z	N	-769	36

DRIVER (ES-2) PEAK RESPONSE TABLE (CONTINUED)

Location	Peak Values				
				2001 LeSaber 10/5/01	
	Class	Axis	Units	Peak	Time
Upper Spine	180	X	G	11.8	101
	180	Y	G	87.1	40
	180	Z	G	-8.7	35
	180	Res	G	87.9	40
Lower Spine	180	X	G	-15.1	38
	180	Y	G	70.6	39
	180	Z	G	-8.3	36
	180	Res	G	71.8	39
Upper Rib	180	Y	G	274.2	32
Mid Rib	180	Y	G	252.2	31
Lower Rib	180	Y	G	198.5	64
Upper Rib Deflection	180	Y	mm	-55.8	42
Mid Rib Deflection	180	Y	mm	-50.8	41
Lower Rib Deflection	180	Y	mm	-44.4	40
Upper Rib VC	180	Y	m/sec	1.6	34
Mid Rib VC	180	Y	m/sec	1.4	34
Lower Rib VC	180	Y	m/sec	1.1	35
Torso Force	600	X	N	1473	102
	600	Y	N	-1367	103
Torso Moment	600	Y	Nm	-57.9	101
	600	Z	Nm	-101.7	103
T12 Force	600	X	N	-801	37
	600	Y	N	1001	32
T12 Moment	600	X	Nm	not collected	
	600	Y	Nm	86.9	89

DRIVER (ES-2) PEAK RESPONSE TABLE (CONTINUED)

Location	Peak Values				
				2001 LeSaber 10/5/01	
	Class	Axis	Units	Peak	Time
Abdomen Front Force	600	Y	N	437	38
Abdomen Mid Force	600	Y	N	475	32
Abdomen Rear Force	600	Y	N	574	33
Abdomen Summed Force	600	Y	N	1324	35
Pubic Symphysis Force	600	Y	N	-2420	35
Right Femur Force	600	X	N	296	35
	600	Y	N	-565	47
	600	Z	N	-998	34
	600	RES	N	1056	34
Right Femur Moment	600	X	Nm	-216.9	35
	600	Y	Nm	-41.2	35
	600	Z	Nm	-39.5	76
	600	RES	Nm	-220.7	35
Left Femur Force	600	X	N	286	32
	600	Y	N	-8763	82
	600	Z	N	1004	79
	600	RES	N	8765	82
Left Femur Moment	600	X	Nm	279.1	37
	600	Y	Nm	-45.7	37
	600	Z	Nm	-22.6	117
	600	RES	Nm	-282.4	37
Pelvis	1000	X	G	-19.4	34
	1000	Y	G	62.2	34
	1000	Z	G	9.3	64

APPENDIX G

ES-2 POLARITY CHECKLIST

ES-2 POLARITY CHECKLIST

Location	Channel	Dummy Manipulation	Polarity
Upper Neck	Fx	Head Rearward, Chest Forward	+
	Fy	Head Leftward, Chest Rightward	+
	Fz	Head Upward, Chest Downward	+
	Mx	Left Ear Toward Left Shoulder	+
	My	Chin Toward Sternum	+
	Mz	Chin Toward Left Shoulder	+
Lower Neck	Fx	Head Rearward, Chest Forward	+
	Fy	Head Leftward, Chest Rightward	+
	Fz	Head Upward, Chest Downward	+
	Mx	Left Ear Toward Left Shoulder	+
	My	Chin Toward Sternum	+
	Mz	Chin Toward Left Shoulder	+
Shoulder	Fx	Shoulder Forward, Chest Rearward	+
	Fy	Shoulder Rightward, Chest Leftward	+
	Fz	Shoulder Downward, Chest Upward	+
Torso Back Plate	Fx	Push Backplate in the +X Direction	+
	Fy	Push Backplate to the Right (+Y)	+
	My	Push Bottom Half and Pull Top Half of Backplate	+
	Mz	Push Left Half and Pull Right Half of Backplate	+
Thorax Upper Rib	Dy	Push Rib Rightward	+
Thorax Mid Rib	Dy	Push Rib Rightward	+
Thorax Lower Rib	Dy	Push Rib Rightward	+
Pubic Load	Fy	Right H-Point Pad Leftward, Left Pad Rightward	(-)
T12 Load	Fx	Chest Rearward, Pelvis Forward	+
	Fy	Chest Leftward, Pelvis Rightward	+
	Mx	Left Shoulder Toward Left Hip	+
	My	Sternum Toward Front of Legs	+
Left Iliac Load	Fy	Left Iliac Rightward, Chest Leftward	+

ES-2 POLARITY CHECKLIST (CONTINUED)

Location	Channel	Dummy Manipulation	Polarity
Ant. Ab. Load	Fy	Left Side of Abdomen Rightward, Chest Leftward	+
Mid Ab. Load	Fy	Left Side of Abdomen Rightward, Chest Leftward	+
Post. Ab. Load	Fy	Left Side of Abdomen Rightward, Chest Leftward	+
Left Upper Leg Load	Fx	Knee Upward, Upper Femur Downward	+
	Fy	Knee Rightward, Upper Femur Leftward	+
	Fz	Knee Forward, Pelvis Rearward	+
	Mx	Knee Leftward, Hold Upper Femur in Place	+
	My	Knee Upward, Hold Upper Femur in Place	+
	Mz	Tibia Leftward, Hold Pelvis in Place	+
Lumbar Spine	Fx	Knee Upward, Upper Femur Downward	+
	Fy	Knee Rightward, Upper Femur Leftward	+
	Fz	Knee Forward, Pelvis Rearward	+
	Mx	Knee Leftward, Hold Upper Femur in Place	+
	My	Knee Upward, Hold Upper Femur in Place	+
	Mz	Tibia Leftward, Hold Pelvis in Place	+